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Forest College Magazine.

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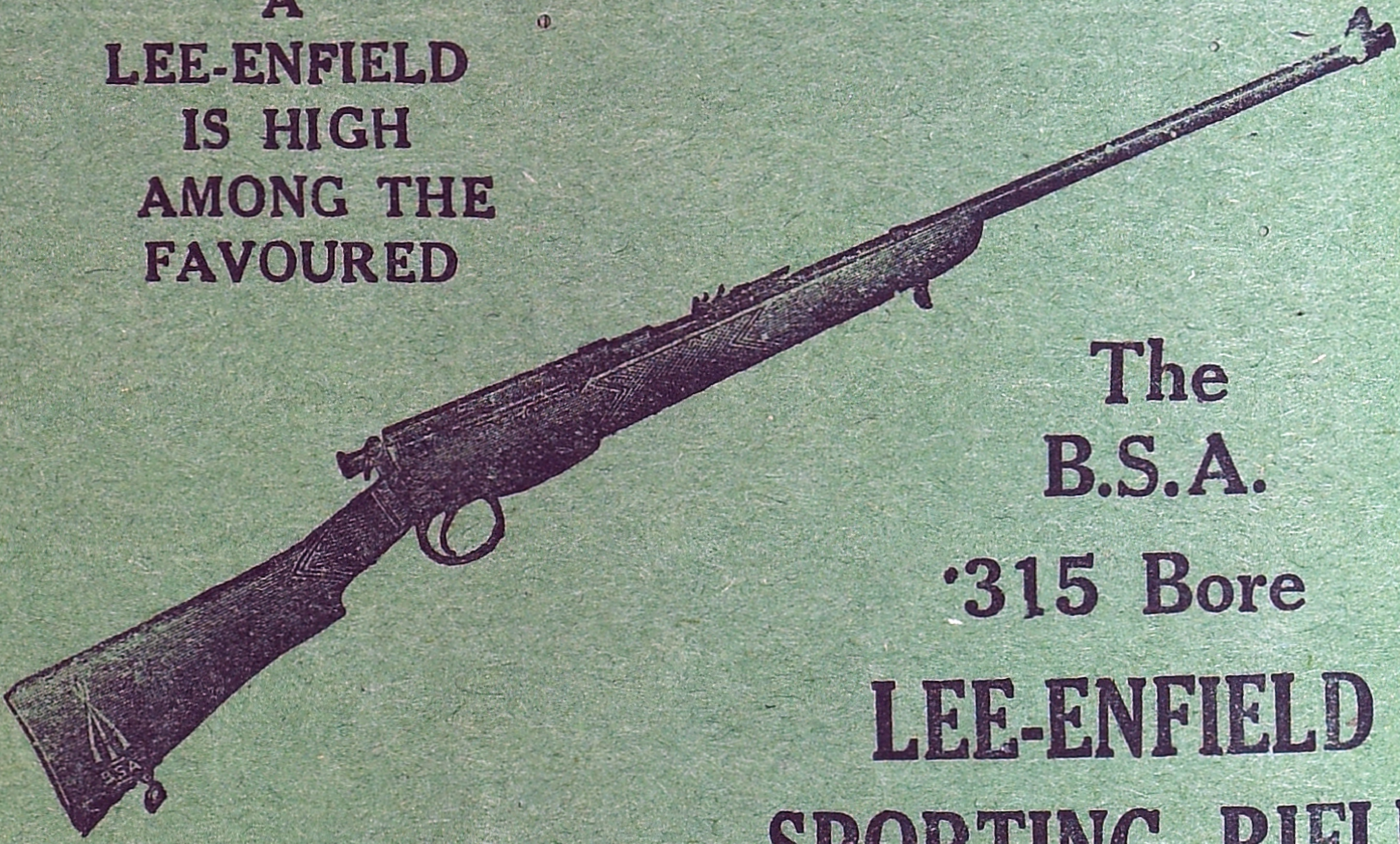
ALL SHIKARIS KNOW
A GOOD SPORTING RIFLE AND

A
LEE-ENFIELD
IS HIGH
AMONG THE
FAVOURED



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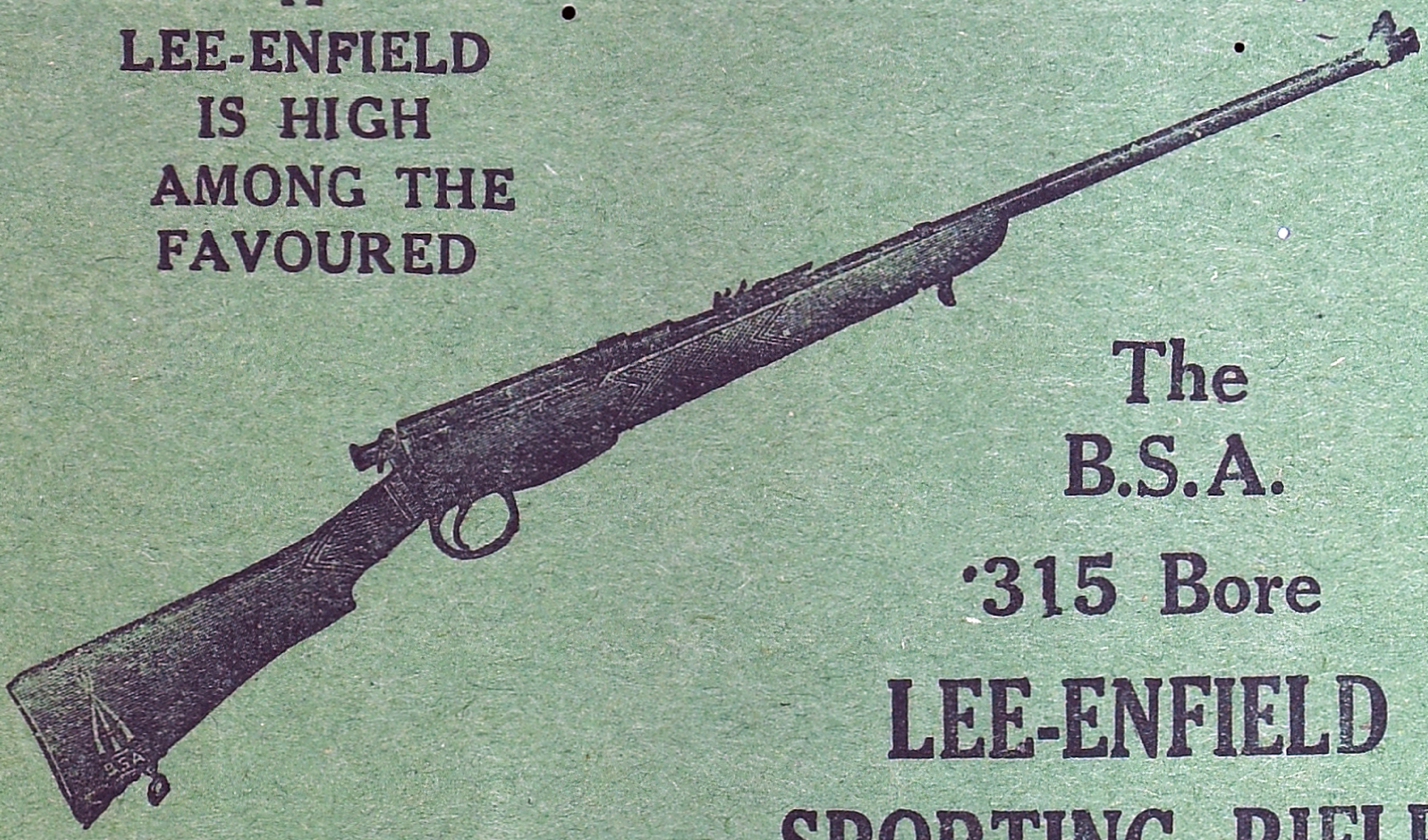

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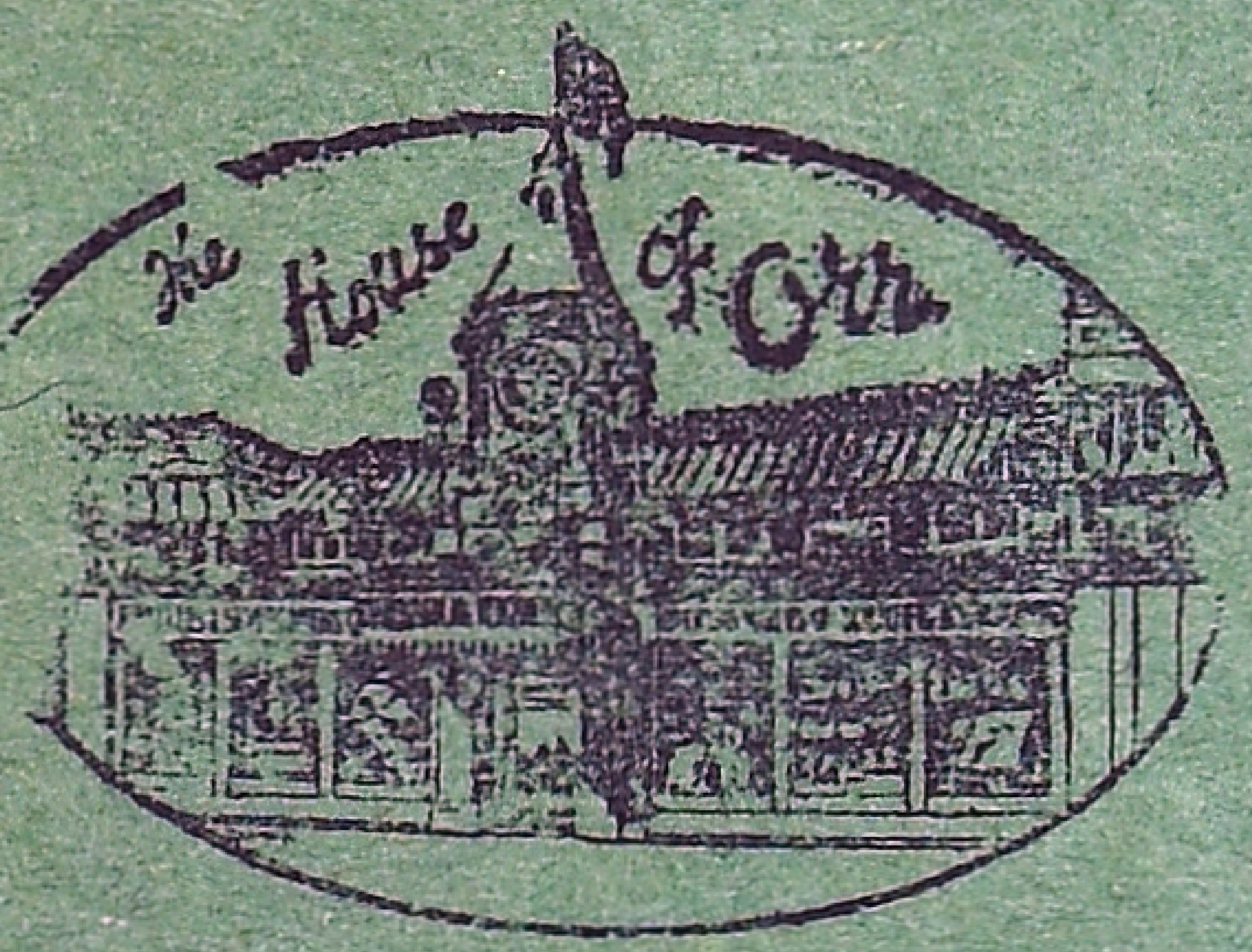

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The Madras Forest College, Magazine

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The *September* Number being the *first* issue of every volume, or year, of the Magazine, will be sent by V. P. P. for Rs. 2—2—0, the payment covering all four issues of the year and the Registration fee for the V. P. P.

It is not intended that the Magazine should be run at a profit so that as our subscribers increase, the magazine will be issued in a more attractive form.

It is the aim of the Management to run the Magazine for the Ranger-class (including Foresters) and mainly by their contributions. Correspondents are needed to supply suitable matter to maintain the magazine on these lines. We feel confident that this appeal will not go in vain. There must be a number of our readers who have something of interest to write on.

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"ROOM THERE FOR THE CHILDREN, PLEASE!"

Remember this, all ye who deem earth's meaning only strife,
God takes the little children's hands to write the joy of life
With their small lives He writes it plain for older eyes to see,
The perfect joy of living, the hope of things to be!
Oh, Man grown old in troubles, send your thoughts towards the place
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Change of Names for some Trees and Shrubs of Madras.

The following list of new names adopted by Gamble in his "Flora of the Presidency of Madras" will serve our readers to keep abreast of up-to-date botanical nomenclature. It is not claimed to be an exhaustive one, only the more important trees and shrubs that have suffered a change of name being dealt with, and is prepared from the seven parts of the Flora issued so far :—

PRESENT NAME.	FORMER NAME.
Malvaceae :—	
Hibiscus Lampas, *Cav.*	Thespesia Lampas, *Dalz & Gibs.*
Eriodendron pentandrum, *Kurz*	Eriodendron anfractuosum, *D.C.*
Sterculiaceae :—	
Pterygota alata, *R. Br.*	Sterculia alata, *Roxb.*
Firmiana colorata, *R. Br.*	Sterculia colorata, *Roxb.*
Tiliaceae:—	
Grewia disperma, *Rottl.*	Grewia laevigata, *Vahl.*

PRESENT NAME.		FORMER NAME.
Rutaceae :—		
Evodia lunur-ankenda, *Merr.*	....	Evodia Roxburghiana, *Benth.*
Toddalia asiatica, *Lamk.*	....	Toddalia aculeata, *Pers.*
Vepris bilocularis, *Engl.*	....	Toddalia bilocularis, *W. & A.*
Glycosmis cochinchinensis, *Pierre.*		Glycosmis pentaphylla, *Correa.*
Limonia crenulata, *Roxb.*	....	Limonia acidissima, *W. & A.* (*not* of Linn.)
Burseraceae :—		
Commiphora Berryi, *Engl.*	....	Balsamodendron Berryi, *Arn.*
Commiphora caudata, *Engl.*	....	Protium caudatum, *W. & A.*
Protium serratum, *Engl.*	....	Bursera serrata, *Colebr.*
Meliaceae :—		
Cipadessa baccifera, *Miq.*	....	Cipadessa fruticosa, *Bl.*
Azadirachta indica, *A. Juss.*	....	Melia Azadirachta, *Linn.*
Chukrasia, *Adr. Juss.*	....	Chickrassia, *W. & A.*
Vitaceae :—		*Ampelideae* :—
Cissus quadrangularis, *Linn.*	....	Vitis quadrangularis, *Wall*
Sapindaceae :—		
Allophylus serratus, *Radlk.*	....	Allophyllus Cobbe, *Bl.*
Lepisanthes tetraphylla, *Radlk.*	....	Hemigyrosa canescens, *Thw.*
Sapindus laurifolius, *Vahl.*	....	Sapindus trifoliatus *Hiern,* (*in part ; not of Linn*).
Sapindus emarginatus, *Vahl.*	....	Sapindus trifoliatus, *Hiern,* (*in part, not of Linn*).
Thraulococcus erectus, *Radlk.*	....	Sapindus erectus, *Hiern.*
Anacardiaceae :—		
Buchanania Lanzan, *Spreng.*	....	Buchanania latifolia, *Roxb.*
Moringaceae :—		
Moringa oleifera, *Lamk.*	....	Moringa pterygosperma, *Gaertn.*

PRESENT NAME.	FORMER NAME.
Papilionatae:—	*Papilionaceæ:—*
Dalbergia sissoides, *Grah.*	Dalbergia latifolia, *var.* sissoides, *Bak.*
Caesalpinioideae:—	*Caesalpineæ:—*
Caesalpinia crista, *Linn.*	Caesalpinia Bonducella, *Flem*
Delonix elata, *Gamble.*	Poinciana elata, *Linn.*
Delonix regia, *Raf.* ...	Poinciana regia, *Bojer.*
Kingiodendron pinnatum, *Harms.*	Hardwickia pinnata, *Roxb.*
Mimosoideae:—	*Mimoseæ:—*
Albizzia marginata, *Merr.*	Albizzia stipulata, *Boiv.*
Enterolobium Saman, *Prain*	Pithecolobium Saman, *Benth.*
Combretaceae:—	
Terminalia coriacea, *W. & A.*	T. tomentosa, *var.*, coriacea, *C.B. Clarke.*
Terminalia tomentosa, *W. & A.*	T. tomentosa, *var.*, typica, *C.B. Clarke.*
Terminalia crenulata, *Roth.*	T. tomentosa, *var.*, crenulata, *C. B. Clarke.*
Myrtaceae:—	
Jambosa.	Eugenia.
,, Munronii, *Walp.*	,, Munronii, *Wt.*
,, Mundagam, *Gamble.*	,, Mundagam, *Bourd.*
,, Rama-Varma, *n. comb.*	,, Rama-Varma, *Bourd.*
,, laeta, *Bl.*	,, laeta, *Ham.*
,, hemispherica *Walp.*	,, hemispherica, *Wt.*
,, vulgaris, *D. C.*	,, Jambos, *Linn.*

PRESENT NAME.	FORMER NAME.
Syzygium Arnottianum, *Walp.*	,, Arnottiana, *Wt.*
,, microphyllum, *Gamble*	,, microphylla, *Bedd.*
,, montanum, *Gamble*	,, montana, *Wt.*
,, Gardneri, *Thw.*	,, Gardneri *Duthie.*
,, calaphyllifolium, *Walp.*	,, calophyllifolia, *Wt.*
,, Jambolanum, *D. C.*	,, Jambolana, *Lam.*
Lythraceæ:—	
Lawsonia inermis *Linn.*	Lawsonia alba, *Lamk.*
Araliaceæ:—	
Schefflera Wallichiana, *Harms.*	Heptapleurum Wallichianum, *C. B. Clarke.*
Alangiaceae :—	*Cornaceae* :—
Alangium salvifolium, *Wang.*	Alangium Lamarckii, *Thw.*
Rubiaceae :—	
Neonauclea purpurea, *Merr.*	Nauclea purpurea, *Roxb.*
Mitragyna parvifolia, *Korth.*	Stevhegyne parvifolia; *Korth.*
Plectronia :	Canthium :
,, didyma, *Kurz*	,, didymum, *Gaertn.*
Broreria :	Spermacoce,
Sapotaceae :—	
Palaquium ellipticum, *Engl.*	Dichopsis elliptica, *Benth.*
Ebenaceae :—	
Diospyros peregrina, *Gurke*	Diospyros Embryopteris, *Pers.*
Apocynaceae :—	
Cerbera manghas, *Linn.*	Cerbera odollam, *Gaertn.*
Lochnera pusilla, *K. Schum,*	Vinca pusilla, *Murr.*

PRESENT NAME,	FORMER NAME,
Boraginaceae :—	
Cordia obliqua, ***Willd.***	Cordia Myxa, ***Roxb,***
Convolvulaceae :—	
Merremia dissecta, ***Hallier.***	Ipomea sinuata, ***Ort.***
Bignoniaceae :—	
Dolichandrone atrovirens, ***Sprague.***	Dolichandrone crispa, ***Seem.***
Stereospermum tetragonum, ***D.C.***	Stereospermum chelonoides, ***C. B. Clarke.***
Radermachera xylocarpa, ***K Schum***	Stereospermum xylocarpum, ***Benth.***
Myristicaceae :—	
Knema attenuata, ***Warb***	Myristica attenuata, ***Wall.***
Lauraceae :—	
Neolitsea Zeylanica, ***Merr.***	Litsea zeylanica, ***Nees.***
Hernandiaceae :—	
Gyrocarpus americanus, ***Jacq.***	Gyrocarpus Jacquini, ***Roxb.***
Euphorbiaceae :—	
Emblica officinalis, ***Gaertn.***	Phyllanthus emblica, ***Linn.***
Macaranga peltata, ***Muell.***	M. Roxburghii, ***W. & Ic.***

—Ed.

Revenue Administration by the Forest Department.

(Continued.)

IV

Improvements in the routine of work and account.

By the time that the constructive portion of the work connected with the Revenue Administration by the Forest Department was completed, the ryots had some genuine grievances to put forth, whenever the District Forest Officer or the District Collector toured on the hills. The root cause of these grievances was the strict measures adopted by the Forest Department to systematise the revenue affairs. The restrictions that were placed on the people in the matter of shifting cultivations, and protection of sandal trees were keenly felt now. The transition from a state of freedom in these matters, to a highly restricted condition was too soon, and naturally the people began to feel it within a few years. The man who formerly cultivated the land as he desired, whether it was a poramboke, or assessed waste, had now to formally apply for it and await the orders of the District Forest Officer to enter the land.

This sort of firm grip on the people by the Forest Department was not relished by them and they began to agitate. This agitation on their part took a different turn and was directed in a different channel. The people confusing Forest village system with revenue administration-both working simultaneously in the same place, began to submit petitions to the Government to allow them to withdraw from the obligations to the Forest Department under the Forest village system. Some villages withdrew, and other did not as there was some split. By withdrawing themselves they thought they would be under the Revenue Department for revenue affairs. After all their agitation was meaningless and they realised their folly a little late.

But since the Revenue Administration continued, the only way left to them was to represent their grievances during the Jamabandy which they did.

To understand their grievances in their true colour a few words of introduction are necessary. It will be remembered that the rates of assessment were very low on the hills, based on the classifications that all lands are dry on the Javadhi hills. Consequently the assessment and kist collections also were low. So it was decided to collect all the assessment in one kist. This practice of collecting it in one kist was really a hardship on the people. They could not manage to borrow the whole amount from the merchants who found it difficult to advance amounts when the crop was on the land. On the contrary if the kist is collected in two or four instalments, for one kist, they can borrow and for the rest they can sell a portion of the harvested crop and get money from the traders. So their first grievance was that the kist should be collected in four instalments instead of one.

The *second* grievance was that kist receipts should be given to each and every pattadhar instead of a consolidated receipt in the name of the 'Ooran' or 'Oor-gownden.' If people paid the amount as wanted by the L. R. Forester and if the Ooran kept the form 20 receipt in his name, the chances are that the people could not know how much they paid and for how much they got receipt from the L. R. Forester. They had chances of refering to the receipt with the Ooran, but the Ooran cannot be all popular. Further, by this means he becomes an important personage in the village, and wonld like to keep the people under his thumb. The advantage of issuing a single receipt in the name of the Ooran was that there was less of scriptory work and the kist was collected in a lump. In case of issuing a single receipt the L. R. Forester cannot expect all the ryots (both rich and poor) to pay on the same day. Either he will have to wait for all for a few days, or he has to issue the receipt finally on a single day when all the amount was collected. The latter is a wrong procedure. But it seldom happens that the Ooran pays for those who cannot manage the amount on the same day. On account of these difficulties the people wanted individual kist receipts instead of a consolidated one. In case of litigations the people will have to depend on the Ooran for the receipts. As this grievance was repeated by the ryots often and often, the District Forest Officer pending receipt of final orders from the Government, ordered to issue separate receipts also for those who wanted them in addition to the consolidated receipts.

The *third* grievance was that the "Delimitation lines" should be shifted, and lands assigned to them for their cultivation. This grievance though at first seemed frivolous, yet had something real in it. In the case of villages which were in the midst of unreserves, the demand was frivolous as there were included within the delimitation lines, sufiicient lands for future expansion of cultivation. But in the case of villages which were enclosures in the

Reserved Forest, no land for future expansion of the cultivation was available, and in such cases, both the "Delimitation lines" and the Reserved Forest line or Enclosure lines coincided. The problem of scarcity of land for those people had to be solved.

These grievances were put forth during the jamabandy of fasli 1331, 1332 and 1333 (i.e,) 1920, 1921 and 1922. In the administration reports on the L R. Administration of these years, these grievances of the ryots were mentioned.

In January 1922, D. L. Sathe Esq., took charge of West Vellore from M. R.Ry. V. Narayana Iyer Avl. Till June of that year when the jamabandy for the year was conducted by the former, there was no material change in the working. During the jamabandy the same grievances were put forth and these were represented to the Government through the Collector of the District.

During September of 1922, A. Y. G. Campbell Esq., I.C.S., the then Land Revenue Commissioner toured on the Javadhis. H. A. Latham Esq., I.F.S., the then conservator of IV Circle and D. L. Sathe Esq., M.A., I.F.S., the then Dt. Forest Officer of West Vellore accompanied him during the tour. They toured extensively on the Javadhis starting from Tirupattur and getting up the hills to Kambugudi, the object of the tour being to study how the Revenue Administration was handled by the forest department.

After a careful study and thorough discussion, the L. R. Commissioner prescribed a detailed system of working and accounts and ordered their adoption from fasli 1332 itself (i.e.) 1922-23.

The following are the accounts in brief. They form the consolidation of all the village accounts required for the purpose:—

(1) Permanent Register I :—It is more or less the Diglot Register without the number and names of the pattadhars. All the survey numbers of the village are written in serial order with their classification, 'taram,' soil, rate of assessment, and total assessment.

(2) Permanent Register II :—It is a register of holdings, in the village. It is written pattawar for each and every village. In this register the number of sandal trees belonging to the Government in each field was shown. Sivayijama cultivations of each pattadhar were ordered to be shown against each pattadhar.

(3) Annual Account I :—It is an account written year after year. It is the same as "Thandal" of the village accounts. It is the account showing the daily collection, land revenue, cess etc.

(4) Annual Account II :—It is a D. C. B. account written afresh year after year. It is written pattawar. The demands of each pattadhar under various heads are shown in the first few columns and the total, the collections datewar from each pattadhar from Account I and lastly the balance due from each pattadhar is struck. There are columns left for showing the extent of Sivayijama cultivations of each pattadhar.

(5) Annual return I :—It is the abstract of all the changes that take place in the permanent register I and II during the year. It is submitted during the Jamabandy for that year to the Jamabandy officer and then to the collector.

(6) Annual return II :—It is the abstract statement of settlement of the beziz berig of a village during the jamabandy. It is prepared during the jamabandy and sent to the Collector and Taluk Office by the jamabandy officer, if the former is not one.

(7) Register of changes in the village :—In this Register all the permanent changes in case of lands such as relinquishments, assignment, transfers of land from one head to another and from one pattadhar to another are shown separately. This register is rewritten once a year and closed during the jamabandy for that year. It corresponds to village Account No. 3.

(8) List of deceased pattadhars:—It is a list of pattadhars who died during the year and consequently the patta is transferred in the names of the legal hairs on the recommendation of the L. R. Forester.

In addition to the maintenance of these registers, some occasional returns also were fixed. All the encroachments should be reported in B. Memorandom forms, and all the formalities of the encroachment act should be gone through. All the assignments should be properly applied for and the orthodox procedure of the Revenue Department should gone through and finally orders of assignments should be made in A. Memorandom.

(9) Stock register of stores :—For the three villages, three field store depots were maintained and abstracts from these store registers for the receipts and issues were submitted by the L. R. Forester to the District Forest Officer.

(10) Though no separate register for the encroachments in the village was prescribed in this system of accounts, yet, a register for the same was quite essential and had to be maintained in Form 2-A of village accounts.

After the prescription of these accounts, the maintenance of cash book for the L. R. collections, Ledger and form 20 receipt issued for the collection of kist were dispensed with. The pattadhars were ordered to be given individual receipts in 'Kachayat' forms as in the Revenue Department. The Land Revenue Forester was ordered to tour for twenty days in the villages and the remaining ten days of the month he was ordered to work in the District Forest Office to post up the Registers of that office. To earn his full F.T.A. he had to tour for twenty days in a month. No clerk was sanctioned in the District Forest Office for the L. R. work though one was applied for.

As has been already mentioned these accounts were ordered to be adopted for fasli 1332 itself which was done.

Practical difficulties in their maintenance:—

When the accounts were prepared in fasli 1332 on the lines prescribed certain practical difficulties and defects in their maintenance were experienced. After the jamabandy in 1923 these difficulties were pointed out to the Government through the Collector of North Arcot. The following are some of them:—

(1) In Permanent Register I, the No. and names of the pattadhars are quite essential to make it complete.

(2) In Permanent Register V the inclusion of the Sivayijama cultivations of the pattadhars changed the permanent nature of the register as these cultivations were changing and liable to change year after year.

(3) In Annual Account II which is a D. C. B statement the inclusion of the Sivayijama cultivations, especially their extent was unnecessary.

(4) The maintenance of a separate account for the Sivayijama cultivation was felt necessary.

These difficulties were petty in nature and when suggested met with the approval, giving powers to the District Forest Officer to maintain any more registers if required.

It is but natural that the officers on the spot who were working ont certain schemes are likely to suggest and try improvements and especially when scheming efficers happen to be there, the results need not be told. D. L. Sathe Esq., who was in charge of the West Vellore division would not rest until he evolved the working of the L. R. Administration as near to the ideal stage as possible never sparing pains. How he further improved it I shall state in the next article.

T. N. V. Ramanujachari,
Student (1926-28.)

The Madras Forest College Athletic Sports, 1927.

The athletic sports of the Madras Forest College were held on the College ground on Wednesday, September 14th, 1927. Fine weather again favoured the proceedings, in spite of a threatened thunder-storm. The performances of the various competitors were distinctly below the usual standard. This is accounted for, I think, firstly by lack of training, and secondly, by competitors not going "all out", but exerting themselves only sufficiently to win, when they perceive themselves in a favourable position.

The Richmond Cup, awarded to the competitor gaining the highest aggregate of marks, was won by Gangolly (Senior Division) with three firsts in the half mile, high jump, and cricket-ball—an aggregate of 15 points. Wali Mohamed was second, 14 points, with a first in the 100 yards, and three seconds, namely 120 yards hurdles, high jump, and cricket ball. Raghaviah was placed in five events, but received only 13 points, one first, two seconds, and two thirds.

The obstacle race, very gruelling for the competitors, but very amusing for the spectators was in fine style by Apte (Junior Division).

Mrs. H. P. Ward very kindly distributed the prizes.

The following are the events :—

1. THROWING THE CRICKET BALL :—

I.	Gangolly	... 85 yards 1′ 9″.
II.	Wali Mohamed,	
III.	Ahmed Khan,	

2. HIGH JUMP :—

I. Gangolly .... 4 feet 8 inches.

II. Wali Mohamed,

III. Raghaviah,

3. 100 YARDS FLAT RACE :—

I. Wali Mohamed. .... 11 2/5 seconds,

II. Raghaviah,

III, Tiga,

4. HALF-MILE :—

I. Gangolly .... 2 minutes 29 3/5 sec,

II. Sitaram Siugh.

III, Dubhashi.

5. INVITATION HALF-MILE—FLAT RACE :—

I. London Mission High School. 2 minutes 19 1/5 sec.

II. Do.

III. Police Recruit School.

6. 120 YARDS HURDLES :—

I. Raghaviah .... 20 1/5 seconds.

II, Wali Mohamed.

III. Abdul Razak.

7. MILE :—

I. Sitaram Singh .... 5 minutes 35 seconds.

II. Bendigiri.

III. Chitre.

8. QUARTER MILE :—

I.	Gaffar Khan	.... 62 1/5 seconds.
II.	Raghaviah.	
III.	Sitaram Singh.	

9. LONG JUMP :—

I.	Astewala	.... 17 feet.
II.	Abdul Razak.	
III.	Raghaviah.	

10. QUARTER MILE :—*(for past students of M. F. C.)*

I. U. Uridachalam Pillai.
II. K, Appiah.

11. OBSTACLE RACE :—

I. Apte.
II. Bendigiri.
III. Pramar.

12. RELAY RACE :—

Winning team ; Central Provinces.

13. SACK SCRIMMAGE :—

Winning team ; Central Provinces.

V. G. D.

Was it not a narrow escape?

Exhausted with the day's work, I returned to the camp that was under the intricate interlacings of over-hanging boughs. A blinding flash of lightning suddenly darted across the lemon tinted sky and it was followed by a deafening crash of thunder.

Though I went to bed to sleep, my mind was in such a state that no sort of rest was possible for me. Hour after hour I tossed about my camp cot, now hovering on the border land of sleep, now wide awake, listening to the murmer of the stream beyond the camp and the thousand and one noises of the night when at last I awoke quite unrefreshed. Getting out of the bed, I went to the door to look out. It was a broad day light and the sun was rising. "The grassy summit of hills, bathed in soft climbing mists grassy glades, and many coloured flowers, the lonely rosy light that danced on the mountains at the rising sun" gladdened my heart. To return to bed was impossible, so, as it was still some hours ahead of breakfast, I dressed myself, took a gun and slipping half a dozen catridges into the pocket of my shooting coat, strolled across the open space into the forest beyond. It was a glorious morning for a hunting excursion, and before I had gone half a mile, I had secured a fine deer for the camp's commissariat. Thinking some of my attendants would soon be on my trail after hearing the report, I plunged into the jungle, keeping my eyes open for any specimens, botanical or zoological that might come my way, Crossing the stream mentioned above I struck out towards the west, and presently left the forest to emerge into an open plain about a mile long by half that distance wide. To the north lay a high cane brake, to the south a deep ravine and on the open glade between them a large herd of deer was feeding quietly.

Remembering that I had been told the other day that the cook was short of fresh meat I resolved to see how many I could bring to book. The only way to stalk them was of course to approach them backward and in order to do this it was necessary that I should cross a stoney valley which ran parallel to the above mentioned stream. I went down the valley and then to get up, I had to throw myself down flat upon my stomach and I wriggled up the side of the little eminence, pausing now and then to take breath, until at the end of 20 minutes I was within 200 paces of them.

The herd still fed on though once I saw an old buck raise his head and look round as if he had scented danger; But as I remained quiet for a few moments, he resumed his feeding and when he had done so, I continued my painful crawl, once on the flat, I lay still to recover my wind and then taking advantage of every tuft and stone, began to approach my quarry. At the end of three quarters of an hour's hard work, I was near enough to get a shot, and accordingly I took a catridge from my pocket and slipped it into the breech of my gun. As I did so, my elbow over turned a large stone which rolled down into the valley. Instantly half a dozen of the herd lifted their heads including my old friend, the big buck who on later examination was found to be a really magnificent animal.

Knowing that if their suspecions were once thoroughly aroused they would not stop until they had put miles between us, I sighted for 100 yards which was approximately the distance and fired. The buck uplifted into the air and fell on his knees. I thought I had got him and was going to jump up and run towards him when I saw I was counting chickens before they were hatched. He had certainly fallen but a second later he was on his feet again and off after the other. I was certain however that I had wounded him and pretty severely too.

My belief proved to be a correct one for about a hundred yards further on, he fell again and seeing this I picked up my gun and ran after him. But even now he was not done for, for after lying still a moment he rose to his feet again and hobbled into the jungle on the road side of the plain, at the same spot where the rest of the herd had disappeared. I followed as swiftly as I could and when I had gained the cover I saw him lying upon the ground near the edge of a deep but dry water course. Needless to say I did not lose very much time in coming up with him taking the precaution to load my gun as I went.

He must have been 3 years old, and when I found that he was not quite dead, I drew my hunting knife and knelt down beside him to bestow the "*coup-de grace*." This done, I wipped my knife on the grass and was preparing to rise again when I felt a heavy hand laid upon my shoulder. Knowing that there was not a soul within five miles of me, my surprise may better be imagined than described. But it was nothing to the terror that seized me when I looked to discover who my friend really was.

Standing behind me and seeming to fill the whole universe, was an enormous black bear the largest I have ever seen or heard of

His wicked eyes gleamed at me, his teeth protruded ferociously from his mouth, while his great hairy arms, were opened as for an embrace. I looked once and then—how I managed it I shall never be able to tell —wiggled like an eel, and leaving my gun behind me, took to my heels. But before I had proceeded ten yards, the great brute was after me rolling from side to side. So close was he behind me that it seemed as if I could almost feel his breath. One thing was very certain, I ran then as I had never run before and as I shall probably never run again. Hardly conscious where I was going, knowing only that I must get out of his reach, I fled across the open space with the intention of making for the plains where I had stalked my deer; but he headed me off and would have caught me had I not stopped at a tree and dodged around it. Then back I went in the direction I had just come, making this time for the opposite jungle. But once more he headed me off and drove me back on my tracks. My agony was intolerable, my breath was almost spent, and I had begun to give myself up for lost, when I saw a tree with a branch close to the ground. Putting forth a final effort, I made for this, dodged around it and once on the other side swung myself into it with, I flatter myself, as much dexterity as the most accomplished gymnast could have shown. At that instant I seemed to live my whole life again. I mounted the tree as fast I could. No sailor could have climbed a mast in better style. Through the leaves I could see my pursuer on the ground looking stupidly about him for the moment puzzled as to my whereabouts. Presently a trembling of the leafy canopy above him must have attracted his attention, for he clutched the lowest bough and began to climb. I was now in a terrible predicament. To climb higher would only be to cut off all chances of retreat or a jump which would, in all human probability break my neck. Within a moment, I reasoned it all out and as he approached on one side I descended on the other. Seeing this, he descended too and with such amazing rapidity that although I had a considerable start, we both landed on the ground at the same instant, I on my feet and he on his head. Then the old game "Catch who catch can" commenced. First I dodged this way then I dodged that, but my dexterity was as useless as it was desperate. He was well accustomed to the sport and I felt, with despair that another five minutes I would certainly see the end of my career unless something unexpected happened to prevent it. Having tried all possible directions, I tried for the dry river bed, mentioned already. By the time, I reached there, I was completely done for. There was no hope for life now; so I closed my eyes and waited. As I did so, I heard the steps drawing near by I almost felt the arms entwine me. Then a voice seemed to whisper "Spring to your right!" As if by instinct, I sprang and at the very moment I heard the great loathsome beast go by me. Even at that moment, when life and death trembled in the balance, my curiosity got the upper hand and I opened my eyes and looked.

A wonderful sight I beheld; on the edge of the ravine, stood the black bear and at his feet, crouched ready for a spring, was my bull-dog, that had by chance been let loose from the camp, with his teeth bared and his whole body quivering with rage. A second later, he leapt into the air and then a desperate battle ensued. The bear fought with all the courage he possessed but the dog had got him firmly by the throat and was holding with all the dread tenacity of his breed.

Without thinking of my own peril, I stood and thought of the narrow escape I made.

R. B. GUPTA,
Forest Ranger, Bihar and Orissa.

EXTRACTS.

1. *Trees hard drinkers.*—Trees are confirmed drinkers. No solids for them, They have no temperate habits. They drink continuously or not at all. Thus they live and grow as extremists, and are either destroyed or die of old age unreformed, says the New York State College of Forestry. In fact, the older they are, the harder they drink, and the greater their thirst. But no trees were ever found the worse for drinking. When they sleep in winter they go to the other extreme, and are teetotalers, but with the first sunshine and thaw of spring they resume their bibulous habits.

When a tree once takes its place at nature's great fountain, "the earth's sweet flowing breast" it demands a steady supply of food, and if it doesn't get it it goes into a huff, throws off its handsome head dress, withers, and dies and turns its heels to the sky.

The liquid food of the tree is brewed in the ground. Water is the important ingredient. Billions of bacteria work to make soluble many substances so that they may be dissolved by water and taken into the circulatory system of the tree. The tiny roots of the tree drink this life fluid, which is lifted hundreds of feet as if by a miracle, defying, as it were, the laws of gravity without any moving machinery. This fluid is distributed to the branches, thence to the leaves, the stomach of the tree, where another miracle is performed when the liquid is digested and made ready to be formed into wood.

The tree grows year by year in height and girth. If it falls in the forest, billions of bacteria will get hold of it, and with the help of air and sun and moisture, its substance will eventually be transformed into the liquid food for other trees.

—*Extract from "Forest and outdoors" May 1927.*

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2. ***Animals that have trades.***—A writer in 'Our Dumb Animals' (Boston) refers to the trades of animals. "***Bees*** are geometricians" he says. The honey cells are constructed so that with the least quantity of comb material they have the largest spaces, and least possible loss by gaps.

The ***mole*** is a meteorologist. ***Eels*** are electricians. The ***nautilus*** is a navigator—he raises and lowers his sails, casts and weighs anchor, and performs other nautical acts. Whole tribes of ***birds*** are musicians. The ***beaver*** is an architect, builder and wood-cutter. The ***marmot*** is a civil engineer. He not only builds houses, but constructs aqueducts, and drains, to keep them dry.

Wasps and ***hornets*** manufacture paper, and it is said that the invention of paper, as we have it, is due to the fact that a

Mangolian got the idea from watching hornets make their nests out of a pulp which they got from weeds and straw and other vegetation.

Catterpillars make silk threads. Here, again, the inventors of silk got their first ideas of manufacturing silk fabrics. *Ants* are architects and military geniuses. They conduct their affairs on the co-operative and socialistie plan, and may be also regarded as statesmen.

—*Extract from " Scientific American, May 1927.*

3. At present the United States of America is spending $ 600,000 a year on forest research, including sums spent by private institutions and industrial enterprises. The Research Committee considers that within the next ten years this amount must be increased to $ 9,000,000 and preferably to $ 12,000,000, if they are to meet adequately their growing needs for forest products and are to make proper use of their forest land.

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The forests harbour birds, lizards and toads, which keep the insects from growing too strong for us. Scientists say that if all the birds were killed, the insects would become so numerous that they would eat all crops and even tree leaves so that human life would be starved off the earth in seven years! . . . Toads are the night watchmen of the garden and are busy devouring cut worms and beetles which hide during the day. Birds carry on the insect war during the day and toads by night.

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In the U. S. A., the per capita consumption of timber is between 200 to 250 cubic feet, as against 20 to 25 cubic feet in Great Britain.

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A reserve match supply can be kept dry, even if soaked in water, by first emptying the box and pouring melted paraffin over layer after layer of matches,

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According to the "Canadian Surveyor," 50,000 square miles of country had been photographed from the air during 1926. Formerly from the ground, 50 square miles a year was mapped. Accurate maps are turned out in a matter of days or months, which formerly were comparatively inaccurate, and took years. These maps are of inestimable value to the forest services, to the geologist, and prospector.

—Forest and out doors—June 1927.

4. *'Kino' from Pterocarpus Marsupium.*—Examination of Kino obtained by wounding the bark of Pterocarpus Marsupium gave the following results:—

Moisture	....	12·2 to 15·7
Insoluble matter	....	0·4 to 5·1
Extractive matter (non-tanin)	....	1·1 to 11·5
Tannin	....	70·0 to 82·4
Ash	....	1·0 to 2·3

—Bulletin of the Imperial Institute, London 1926. Vol. XXIV No. 2. p. 221.

5. *Use of Eucalyptus trees in Brazil for Paper-making.*—As the result of special experiments carried out in the Forest Products Laboratory, Madison, U. S. A., the San Paolo railway company has undertaken the wholesale manufacture of paper for newspapers from the wood of Eucalyptus trees.

To determine the most suitable species, the forest service of the company made a collection of 118 species. * * * The special treatment employed seems to give better results on young Eucalyptus trees of 5—7 years old than on older trees. The determination of costs of production by the American expert Miller of Madison has established for San Paolo a cost of 19 dollars per ton of pulp, and 39 dollars per ton of paper. The cost of a ton of such ordinary newspaper varies between 60 and 65 dollars in the United States, in San Paolo it is 88 dollars.

—*International Review of the Science and Practice of Agriculture. June 1927.*

6. *The effect of grass undergrowth on trees* :—HOWARD, A. (Institute of Plant Industry, Indore). Effect of Grass on Trees. *Proceedings of the Royal Society*. v. 97, p. 284-321, 6 tabl., bibl, London, 1925.

In meadows and pasture lands of temperate regions, trees flourish even when surrounded by numerous grasses which are an artificial product created by man from the original forest and maintained by cutting and manuring, In tropical regions, on the other hand, where pasture lands are scarcer, land covered with grass when protected from animals, quickly becomes covered with shrubs and trees. Although the trees tend to eliminate the grass, in cases of a natural struggle, it sometimes happens that the grasses are capable of suppressing the trees. In various parts of the world, it is noticed that pear trees, apples and cherries do not thrive when there is an undergrowth of grass, if the soil is a heavy clay. The cause of this failure to thrive has been attributed by some people to a soil toxin which however has never been isolated.

Ill effects are lacking or are reduced to a minimum in well aerated and permeable soils, while after all it is certain that under natural conditions the grasses could not hold out against the trees.

The writer has investigated the problem by experiments at Pusa, which is situated on an old alluvium of the Ganges, examining various species of fruit trees. He observed that there were really deleterious effects when the trees were young; less injury was experienced on the other hand by mature trees. When artificially trenched, some trees, such as the mango, the loquat (*Eriobotrya japonica*) and the lichi (*Nephelium Litchi*) may recover, while others, such as apple trees, *Citrus medica* and *Anona squamosa* do not feel any effect. The guava (*Psidium Guyava*) can grow fairly well even with an undergrowth of grass and does not feel any effect from aeration. When the causes of these phenomena are investigated, it is observed that the grasses only have an effect on the superficial root system of the tree and not on the deep root system; this effect is shewn in the reduction of the growth of the superficial roots and of the number of active rootlets.

Now at all seasons and under all conditions the various root systems show a considerable reaction to improved aeration. Even during the dry season, when the permeability of soil is at a maximum, the deep roots continue to ramify and to form abundant rootlets which grow in the various cavities and in the deep strata. After the rains, the superficial root system becomes markedly aerotropic and enters into a phase of activity: This is the period of active nitrification and of growth of the leaves and of the trunk. Now the grasses become injurious either by restricting the aeration of the superficial rootlets during the rainy season (monsoon), or by reducing the provision of combined nitrogen during the whole year. There would then be the toxic effect of carbonic acid which accumulates in the soil during the rains, and the decrease of the provision of nutritive material (nitrogen). This explains the good effects which may be obtained in certain cases where trenching is done and those following nitrogenous manuring, which last however is ineffective in the case of the lichi and loquat. The possibility of the injurious effects being due to a hypothetical toxin, may be excluded.

A. F.

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7. *The autobiography of trees*:—MacDougal, Dr. D. T. (Carnegie Institution of Washington). ***American Forests and Forest Life***, Vol. XXXII, No. 395, pp. 661–663-Washington, 1926.

The dendrograph is an instrument recording the growth behaviour of a tree in relation to changes in the outside world, and how it is affected by rain, and wet and dry periods.

The total diameter increase in rapidly growing trees can easily be measured by the direct use of tapes or callipers. But many most important trees put on annual layers of wood no thicker than O. I in., and some after the first 200 or 300 years of life add not more than half this amount to the wood yearly.

Tapes and callipers are too crude for registering such growth, hence the invention of the dendrograph.

The essential part of it consists of a rigid floating frame or polygon of bars of some material, whose dimensions are unaffected by heat or cold, such as "invar" or fused silica. A thrust screw extends from one side of the floating frame and makes contact with a smoothed spot in the inner bark. A slender sliding rod of fused silica on the opposite side of the tree is in contact with the tree at one end, while the other end presses against the short arm of a ¬ shaped lever, held in this position and pivoted at the heel. A pen is carried on the long arm, and traces a line on a sheet of paper ruled to millimetres and carried on a revolving drum The pen moves up and down with any change in the diameter of the tree. With levers arranged to give a 10–20 magnification, an annual increase in diameter no thicher than a sheet of paper can be shewn.

The chief difficulty is fixing the floating frame and recorder firmly in a suitable position. This has been overcome by means of a belt of wooden blocks joined by metal links in such way that it can be fastened to any desired degree of tightness around the trunk. Four or five wires arising from metal bases hold to the floating frame in such a manner that this is kept in place with a gentle pressure of the contact screw.

Most trees, quite independently of growth, show a daily expansion and contraction. The action of the leaf pumps in pulling up water thorough the woody conduits is so strong, that most tree trunks show an actual shrinkage beginning in the morning and continuing till afternoon. Late in the day the pumps slacken and the wood expands to its early morning dimensions. Anything affecting loss of water from the leaves, or the supply entering the roots, such as fog, rain or dry winds modify this phenomenon.

Five weeks record of a Monterey pine (*Pinus radiata*) shows marked difference between the character of the daily variations in June and July and that of those in September. A heavy fog will prevent contraction, while rain will accentuate the nightly swelling. Changes in this pine may be as much as 1 : 200 to 1 : 1,250 parts of its diameter. Such changes are the exact opposite of those which may be caused by temperature, as the tree shrinks when it is warmest and is losing water rapidly, and expands as it cools.

The dendrograph has been applied to many varieties of trees, but the author's attention has been chiefly concentrated on the Californian redwood, of which records are being made of dozen trees, and on Monterey pine.

A dendrograph was first installed on Monterey pine No. 1 four feet from the base in September 1918. The record shows its behaviour continuously to this moment. A second was fixed on the trunk 27 feet from the base in January 1920 and the traced line is ever lengthening. A modified dendrograph was fixed to a large root in 1923, so that the tree is now writing a three part diary.

The information given by the dendrograph, together with the results of studies of the hydrostatic systems of trees, promise solutions to many pyysiological problems of woody plants.

8. *Wonders of nature ; how plants thrive within animals* :— Mr. C. M. Yonge, writes in *The Nation and Athenaeum*.

Complex though the study of plants and animals may be, yet one thing is clear ; nothing lives unto itself, life is a great organic unity whose multitudinous members are entirely dependent the one on the other. In some cases this inter-dependence is not apparent on the surface although a more careful examination will always reveal it, in others there are definite associations, two entirely different creatures being dependent on one another for food, shelter or reproduction, while finally there is a still more intimate partnership in which the members live in the closest possible relationship—one form of life actually within another. This of course, may take the form of parasitism, in which case the advantage is entirely on the side of the parasite, but it may also be to the mutual advantage of the organisms concerned, and it then rceeives the name of " Symbiosis " from Greek words meaning to live together. So intimate may be this type of partnership and so great the mutual need of the members that they are unable to exist apart. The unravelling of these intertwined threads of life has provided one of the most fascinating chapters in the book of biology as an account of two of the most interesting examples will perhaps indicate.

The termites or " white ants " are a group of insects which live in organized communities, like the true ants or the bees, with various types of individuals or "castes"—workers, solidiers, and etc. The majority of them live on wood and do so much damage to buildings in the tropics as to constitute a serious pest. It is invariably the case that when these termites are opened their stomachs are found packed with minute unicellular animals or protozoa. Their presence was for a long time a mystery, but by a series of very ingenious experiments it has recently been discovered by an American scientist that it is possible to kill all the protozoa without damaging the termites in which they live and that as a result, the termites are no longer able to extract nourishment from wood; they eat it as hungrily as before, but they are unable to live on it, and, in a few weeks, all are dead.

He then proceeded to examine the protozoa and found extremely minute fragments of wood within them, some of which were apparently being digested. Since he also knew that the protozoa could live indefinitely in termites fed exclusive on wood, but died when the termites were given other food, he came to the inevitable conclusion that it was the protozoa and not the termites, which digested the wood.

It is clear from these experiments that we have here to do with a perfect example of symbiosis between two very different types of animals. The protozoa cannot exist apart from the termites, and only within them when the latter are feeding on wood, while at the same time the termites cannot live on the wood without the help of the protozoa which digest it for them. So both parties gain by the arrangement; the protozoa are sheltered and provided with their especial food by the termintes which, in their turn, are enabled to live on wood which they cannot digest for themselves but which the protozoa digest for them.

To turn to a very different animal and a still more interesting case of symbiosis. There lives on the sandy shores of Northern Brittany and the Channel Islands a little flatworm, only one-eighth of an inch long and bright green in colour—like the tiny fragment of a leaf. It occurs in large colonies which form green patches on the yellow sand, and is an animal of the most regular habits, suddenly appearing from beneath the sand immediately after the tide has left it and disappearing just before the sea turns. This little creature is known as Convoluta, and its peculiar structure and mode of life have been very carefully studied. It has been found that the green colour is due to the presence in the tissues of a vast number of minute plant cells which are not present in the egg, but with which the animals become infected in the early stages of development; if they are kept free from infection by artificial means they cannot develop properly and soon die.

Like all other plants the green cells are able to form starch out of water and carbon dioxide with the aid of sunlight, and a great deal of the starch is handed over to the animal. Although it is able to feed in the usual way in early life, Convoluta soon finds that it is much simpler to depend entirely on the starch from the green cells, and as a result of disuse its digestive organs degenerate so that it can no longer, even if it so wishes, feed like a normal animal. This is the explanation of its regular habits, for, in order to obtain the sunshine without which the green cells cannot do their work, it has to expose itself to the full glare of the sun for as long as possible.

In time, however, the green cells are unable to supply the growing needs of the animal which begins to feed on them so that they gradually disappear, and at this stage a Convoluta presents the strange appearance of an animal with a green head and a while tail. Finally, having killed its best friends, the little flatworm pines away and dies, though not before it has laid great numbers of eggs which will maintain the race.

Here we have a case of union between animal and plant. It is perhaps hardly so perfect an example of symbiosis as the other because, though the plant receives both shelter and supplies of certain necessary foods from the worm, it is eventually destroyed: while the worm receives food from the green cells, but not enough, and so is forced to destroy the very organism on which its life depends. Moreover, though Convoluta is absolutely dependent on the green cells they are quite capable of living freely in the sea. But for the greater part of their life together, Convoluta and its green cells represent one of the most remarkable eases of symbiosis of which we have knowledge.

9. *Destruction of forests. Its disastrous effects*:—"The Nature" of Saturday, January 8, 1927 writes:—

The question of the action of forests on rainfall has been debated by foresters, agriculturists, engineers, and others for a long period, the discussion probably dating back to the time at which scientific forest conservancy was first introduced. In the tropical and subtropical parts of the world this is not, however, the point of primary importance. The vital factor for the community at large is the determination of how far the destruction of forests in catchment areas and on the sides of hills and mountains in the drier parts of a country affects, in the first place, the level of the water in the big rivers a matter of extreme importance when the rivers are utlised for irrigation or power works; secondly the decrease in the local water supplies and in local precipitations upon which the cultivator is dependent; and, thirdly, erosion and avalanches, and the destruction they cause in the fertile valleys beneath. Sudden floods may also cause enormous damage to railways, towns and so forth .In India which was the first part of the British Empire to give consideration to this aspect of the forest question, the matter has been the subject of discussion and reports through the whole of the past century, a statement which will perhaps come as a surprise to many in Great Britain.

The problem of affording protection to forests for the above causes alone is by no means new. In France and Germany special laws for the protection and extension of the forests and the protection of agricultural lands by means of the forest have long been in operation; and similar laws exist in the Italian States. So far back as 1475 the subject attracted the attention of famous Venetian Council of X., by whom a law was passed on January 7 of that year, regulating in great detail the clearance of the forests on terra firma. The mountain forests especially were protected by judicious regulations, which were renewed from time to time down to the very year of the extinction of the old republics. Tuscany and the Pontifical Governments were equally provident.

History has since shown that the wholesale destruction of forests in Spain, Italy, Sicily, Greece, and Macedonia has resulted in a great deterioration of climate over considerable tracts, due to loss of moisture, the sterilisation of the soil, and excessive erosion.

ACTION OF THE FOREST.

Although now well-known, the chief action of the forest may be stated briefly as follows: The great factor in mountainous and hilly country is the maintenance of tree growth on parts of the area. In the case of bare slopes the rain rushes rapidly down, causing erosion, only a fraction percolating into the soil, and is carried rapidly away, giving rise to spates and perhaps to serious floods, since the old channels of these streams or rivers are no longer able to carry the excess water of flood levels. A hot sun bursting out on to the slope after the rain quickly dries up the thin layer of moisture covering it. In the hotter parts of the globe subject to heavy rainstorms or monsoons the rushing water starts gullies which eventually become ravines, all surface soil is rapidly washed away, and in the course of years the hillside is eaten into, rubble and boulders being sent down to cover up valuable lands below. When the area is under trees, a portion of the rain, falling on the crowns, drips slowly down on to the layer of humus beneath and sinks into it. The larger portion, perhaps, falls direct on to the forest floor, where it is gradually absorbed in the soft covering which takes it up as a sponge. The water then percolates slowly downwards, filling up springs and underground reservoirs, and reaches the streams in a retarded manner. The flow in the latter is consequently more even and regulated, as also the amount of water which eventually reaches the rivers. The latter can therefore be more depended upon to maintain a normal level when it is required to utilise them for irrigation of power works. The roots of trees protect the surface by holding up the soil, and thus directly prevent denudation.

It is possible to give some concrete examples of the effects of the destruction of teak forests in India during the first half of last century, owing to the large demands for this timber from rapidly expanding markets.

The slopes on the west coast of the Bombay Presidency were once, even in the early days of British occupation, covered with magnificent, valuable, and extensive teak forests. These have long since been cut out, some disappearing for good. The denudation of the Deccan Highlands and the Eastern Ghats has resulted in excessive erosion and the gradual silting up of the rivers. When the Dutch, French and English first built settlements on the Coromandel Coast, it was possible to take ships up the Godavari and Kistna. The English port of Narasapur and the French one of Yunaon, both on the Godavari, were once the chief ports on this coast. They can now be reached only at high tide by small native shallow draught craft. Last year the present writer had arranged to go down the Godavari from Sironcha, on the frontier of South Chanda (Central Provinces) and the Hyderabad State, to Rajamundry, as he wished to carry out investigations in connexion with the effects of forest denudation on this river. It was early in March, the commencement of the hot weather season only. Inquiries elicited the fact that few rafts were now going down, owing to the extensive sandbanks already drying off in the river, and that even by dugout canoe, delays from stranding on the sandbanks would be inevitable. Some hundred years ago this great river was the chief artery or high road into the interior! At Masulipatam, Dutch ships used to ride at anchor close up to the port, whereas at the present day even small native vessels have to anchor five miles out in the roads owing to the silting up. Between 1840 and 1850, Dr. Gibson, the first Conservator of Forests in Bombay, drew up a list of the rivers and creeks on the Malabar coast, where on arrival in those parts ships used to ride at anchor, all the creeks having silted up within the memory of men then alive.

Dr. Cleghorn, who afterwards became the first Conservator of Forests in Madras, directed attention to the destruction of tropical forests at the meeting of the British Association in Edinburgh in 1850. A committee was appointed to consider this matter. Dr. Cleghorn submitted its report, which was confined to India, the only country for which information was available, at the meeting of the Association at Ipswich the following year. The report summarised the position, as then known to the few in India who had given attention to the matter, pointing to the great and un-controlled destruction which was taking place, both at the hands of timber merchants and owing to the careless habits of the native populations, who grazed their cattle at will in the forests and fired them every year in order to encourage the growth of new grass. The indigenous tribes in the hilly country also practised unchecked shifting cultivation, a practice second only to the lumberer in the destruction of fine forests. Under this methods, which was a common habit in Europe in olden times, a patch of good forest is felled and the material burnt in situ; coarse grains are then sown on the clearing. The cultivator then sits down and awaits the harvest. Two or three crops are taken off the area; the weeds then became too strong (as he never troubles to weed) and he moves on to a fresh area. The enormous destruction of virgin forest this practice entails, when practised for centuries, has to be seen to be credited. Yet many of the tropical and sub-tropical forests in British Colonies and Dependencies are still subject to this the most pernicious and precarious form of so-called agriculture (as also to overgrazing and firing), the administrations responsible not having yet, apparently understood the evils which attend it. The difficulties facing these Governments in prohibiting the practice or controlling it were all experienced in India, in one form or another, and overcome.

The encouragement given to the growth of tea and coffee and similar crops by British administrations in the Empire, whilst eminently praiseworthy if carried out on well-considered lines has been productive of great harm in the past and even the present day can scarcely be said to be free from anxiety on this score. In a report written in India in 1876 with reference to coffee planting, the following criticism is made :

"The planters who come over from Ceylon are now giving a very high price for land, and on the whole mischief may be effected in a very short time. It must not be supposed that coffee is at all a permanent cultivation; we have only to look at the Sampajee Ghat in Coorg, the Sispara Ghat in the Nilgiris, and parts of the Annamalais to see at once that it is very often very little better than the shifting cultivation of the natives. It pays a coffee planter to take up a tract of primeval moist forest on our mountain slopes for a few years; he gets bumper crops the third, fourth and fifth years, but denudation of the soil and erosion goes on rapidly, and it does not pay him to keep it up many years."

Two other examples may be mentioned. In Ajmere-Merwara in Rajputana, all the waste and forest land was handed over to the people by Government in 1850. The hills were rapidly denuded of timber and grazing was uncontrolled. The crops are irrigated from tanks (ponds) formed by building embankments across ravines. Some of these were very old. The rainfall is scanty and comes in heavy showers. The water, rushing down in torrents, quickly eroded the denuded hillsides, the tanks filled up with silt and debris or the embankments burst. In 1869, at the end of a two year famine, the region was described as follows: "The cattle had perished, the people had fled, large villages were entirely deserted and the country was almost depopulated." All this was due to the mistaken policy of giving to the people what they had clamoured for, the uncontrolled use of the forest lands. An even more classic example is that of the well-known Hosiarpur Chos in the Punjab. These hills were formerly fairly well-wooded. A rapid increase in population followed the advent of British administration in 1846. The consumption of forest produce augmented the herds of grazing cattle multiplied excessively and complete denudation ensued. This was followed by erosion, broad stretches of sand invading the plains beneath, with the result that the arable lands of 940 once prosperous villages were covered with sand, which laid waste upwards of 70,000 acres of fertile lands. In 1900 this formerly rich district was traversed by numerous broad parallel, sandy belts cut out of the crop-bearing and fertile area.

Preventive Action in India.

In India these matters are now well-understood, and the Forest Department supported by the Government, has control of the great forest areas. Proofs of the disadvantages and disasters following the uncontrolled wasteful utilisation of the forests in mountains and hilly country are not therefore wanting. It is known that the same processes are at work, and the same mistakes are being made in our Colonies. It is the habit of British administrations to work in water-tight compartments. Probably the major portion of the difficulties being experienced in different parts of the Empire have been solved or are approaching solution, in one or other of the provinces in India. They present no new features as some appear to think as the above-quoted examples go to prove. The chief difficulty is that action is delayed until almost irretrievable damage has been done and then the forester is asked to reafforest the areas so denuded This entails an enormous expenditure, great skill, with success ever hanging in the balance;

Attention was directed to this subject at the meeting of the British Association in Edinburgh in 1920 when a paper dealing with the Indian forests was read. Resolutions of the same kind were also passed by the World's Forestry Congress held at Rome in May 1926. As an outcome of last year's meeting of the British Association at Oxford, the Chairman of the Forestry Sub-Section, Lord Clinton, drew up for the Council a brief statement dealing with the destruction of forests on hill slopes, with special reference to the tropical forests of the Empire. This memorandum has been submitted to the Secretary of State for the Colonies, by whom it is being communicated to the Colonies and Protectorates. It may be hoped, therefore that the chief factors of destruction, namely, shifting cultivation, excessive grazing and the firing of forest lands, may receive that measure of considered control which the expert forestry services under the Colonial Office are fully capable of inaugurating if supported by the several administrations.

S. RANGASAMI AYYANGAR,—Range Officer.

* * * *

"The leaves of Coniferae live according to S. Simon, about seven years, those of other evergreen plants usually no longer than two seasons."

* * * *

"Some soils, especially those containing much clay, lime, or *humus*, have the property of retaining potassium, and ammonium salts, and in less degree salts of calcium and magnesium, as well as phosphates, these substances are not easily washed out of the soil but can be obtained by plants. This is spoken of as the power of absorption of the soil for the substances in question: This does not hold good for all salts ; thus, for instance, sulphates and nitrates are not absorbed. Absorption is completely wanting in a pure sandy soil."

* * * *

Worn down tips of Bison horns :—"Dunbar Brander, among other writers, records that old bull bison (Gaur) use their horns as implements, with the result that their horns are worn down considerably. I cannot believe however that the wearing down of the tips of bison horns as one sees in old bulls, is entirely due to this, and I think that it is due mostly to a failure of lamination after a certain age, and a close examination of heads with worn horns has strengthened my belief in this."—Randolph C. Morris. (Extract from the Journal of the Bombay Natural History Society August 1927).

Editorial Notes.

Proceedings of the First World Forestry Congress, Rome :—We have been requested by the International Institute of Agriculture, Rome, to inform our readers that the Institute has just published the proceedings of the International Forestry Congress held in May 1926. The publication is in four volumes, of 750 pages each, with about 300 photographs and diagrams. The fifth volume which will contain the general section, the speeches, reports of the meetings, resolutions etc. is in preparation, and will be distributed as soon as possible.

The Proceedings will be of the greatest value to all who are engaged in forestry questions, as they contain reports on every possible subject connected with forestry, in its statistical, political, economic and legal aspects, and technical problems relating to forestry and forestry operations. One volume is entirely devoted to the reports presented on the control of torrent-waters, reafforestation of mountain areas, plant diseases, games, fisheries, together with questions of tropical forestry reserves, and uses of the timber of tropical countries.

The price of the complete work (five octavo volumes with a total of about 3,500 pages) is 300 Lires. (1 Lire = 9½d.)

* * * *

Logging Engineering Division, Madras:— The Logging Engineering Division of the Madras Forest Department was camping in the Madras Forest College for about three months since July last and was engaged in the "monsoon office" work. The latter was inspected by the Chief Conservator of Forests, Madras, the Chief Forest Engineer etc, and the Forest Engineer, Bengal, together with the Imperial Forest Economist Dehra Dun, who all evinced a great interest in the same.

Mr. J. K. Pearce, the Logging Engineer delivered a course of very interesting lectures to the students of the Forest College, which we hope to publish in the ensuing numbers of our magazine.

* * * *

Madras Forest College, 1927—29 Division:—Twenty-nine students were admitted to the Forest College, Coimbatore in August 1927. Of these:

8 are from the Madras Presideney ;

4 from I circle.

1 „ II „

2 „ IV „

1 „ V „

11 are from the Central Provinces ;
5 „ „ Bombay;
1 „ „ Bihar and Orissa ;
1 „ „ O. F. S. ;
2 „ „ Hyderabad ;
1 „ „ Baroda ;

* * * *

Late Mr. O. Venkataramana Ayyar.

We regret to record the death, on 10th September 1927, of Mr. O. Venkatramana Ayyar, D.D.R., Forest Ranger I grade, in his residence at Saidapet. He was on leave on medical certificate since June 1926, and had put in a service of about 32 years. He leaves behind him a large circle of friends and relatives to bemoan his loss.

Additions to the Madras Forest College Library March to Sep. 1927:—

1. The Book of high explosives—Published by Nobels Explosive Company Ltd., Glasgow,
2. The Forests of India—Vol. III, By E. P. Stebbing.
3. Forestry for profit—By, Theophilus Tunnis.

4. Administration report of the Forest Department of His Exalted Highness. The Nizam's Dominions for the year 1334 Fasli.

5. Administration report of the Forest Department of the Madras Presidency for the year ending 31st March 1926.

6. Report on progress and proposed future expansion in the utilization of the Forest resources of Madras—By J. K. Pearce.

7. The North Kanara coast fuel working Plan.

8. Madras Agricultural Department year Book, 1925.

9. Progress report of the Imperial Forest College, Dehra Dun for the year 1925–26.

10. Report on Public Instruction in the Madras Presidency for the year 1925–26.

11. Report on the operations of the Department of Agriculture, Madras Presidency for the year 1925–26.

12. Forest Products Research Technical Paper :—

No. 1. The movement of moisture with reference to Timber seasoning.

No. 2. Moisture movement through wood. The steady state.

—By S. T. C. Stilwell Bsc.

13. Working Plans for :—

(i) Thaton Forest Division, Tenasserim Circle, Burma for the period 1925–26 to 1934–35.

(ii) Kaleinaung and Heinze Reserves, South Tenasserim Forest Division for the period 1926 to 1935.

(iii) Prome Forest Division for 1926 to 35.

14. Practical Earthwork Tables : by N. N. Mitra.

15. Materials of construction as used in India Vol. I. Non-metals. Vol. II. Metals etc.—By, N. N. Mitra.

16. Revised Working Plan for the Kamanguli and Ankola High Forest Blocks. XXIV and XXV; Kanara, South Division South Circle—1927.

17. Revised Working Plan report of the High Forests old series I to VII of the Kanara North Division. 1927.

18. Revised Working Plan for Nagargali High Forests—Series XIX, Belgaum Division; Second Edition. 1926.

19. Working Plan for the Nawapur—Nandurbai Reserves—1926.

20. Forest Research in India. 1925–26.

21. Actes Du congres International De Sylviculture. Rome 29. Vol. IV and V 1926.

22. Revised Working Plan for the Walayar Forests, Palghat Division. 1926 to 1935.

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Additions to the Gass Forest Museum March to September 1927 :—

Serial No.	CONTRIBUTION.		CONTRIBUTOR.
1.	Five long and 5 short panels of Timber :— Gurjan. Thingan. Koko. W. Chuglam. Padauk.	....	M. E. R. Taylor Esq. Divisional Forest Officer, South Andamans Division.
2.	An Abnormal Specimen showing fusion of an *Eugenia jambolana* with *Poeciloneuron indicum*	....	Mr. K. G. Monappa. R. O. Valparai
3.	One long panel and one short panel of figured satinwood	....	Conservator of Forests, Ceylon.
4.	'Jayi baddalu butta'—a basket made of the grass 'Jayi Baddalu' at Parlakimedi.	....	Mr. A. Neeladri Rao, M. F. C. 1925–27 Division.
5.	A tray made of the grass Saccharum munja, and Andropogon sp. and a matchbox made at the Kanjikod Match Factory	....	Mr. U. Tiwari, M. F. C. 1925–27 Division.

Publications received during April—September 1927.

1. " The Journal of the Madras Agricultural Students' Union."—March to August 1927.
2. " The Junglewallah "—April—September. 1927
3. " Rural India "—April—September 1927,
4. " The People's Friend "
5. " International Review of the Science and Practice of Agriculture"—February 1927 to June 1927.

Gazette Notifications.

21—6—1927.

His Excellency the Viceroy and Governor-General is pleased to confer the title of Rao Sahib as a personal distinction, upon:

M. R. Ry. Gregory Stanislaus Lasrado Avl., E. A. C. of Forests (Retired), Madras Presidency.

5—7—1927.

Mr. J. E. M. Mitchell, Deputy Conservator of Forests, an extension of leave on half average pay for one month from 7th September 1927.

Mr. B. K. Roy, Assistant Conservator of Forests, on leave, permitted to return to duty before the expiry of his leave and resume charge of the South Cuddapah Division.

Saiyid Riazuddin Sahib Bahadur, D. F. O. South Cuddapah will, on relief by Mr. B. K. Roy, be attached to the North Cuddapah Division.

12—7—1927.

M. R. Ry. J. Sadasiva Ayyar Avl., D. F. O. Kollegal, to be D. F. O. North Salem, with effect from date of joining duty.

Mr. W. C. Hart, D. F. O. North Salem, to be D. F. O. South Kurnool from date of joining duty.

Mr. N. D. M. Sahni, Assistant Conservator of Forests, the Nilgiris Division to be D. F. O. Kollegal, *vice*, M. R. Ry. J. Sadasiva Ayyar Avl.

M. R. Ry. A. Raju Naicker Avl., E. A. C. of Forests, granted extension of leave on average pay for one month in continuation of the one month leave already granted.

19—7—1927.

Mr. N. Trimurthi, A. C. F., granted leave on average pay for two months from 4th August 1927.

Mr. C. R. Ranganatham, A. C. F., of Forests, Palghat Division is posted to act as D. F. O. Vellore. with effect from 10th August 1927 until further orders.

Mr. S. Ramasami Ayyar, D. F. O., Vellore, will on relief by Mr. C. R. Ranganatham revert to his former duties at Tiruppattur, Vellore Division.

M. R. Ry. E. K. Krishnan Avl., E. A. C., of Forests, Nilambur Division, is attached to the Wynaad Division with effect from the date of joining that Division.

26—7—1927.

Captain H. A. Irwin, Forest Engineer, Madras, granted privilege leave for one month from 1st September 1927.

Mr. C. J. Van Haeften, E. A. C., of Forests, will hold charge, of the Forest Engineer's Division, during Captain Irwin's absence on leave.

Mr. S. Ragunatha Rao, A. C. F., Lower Godaveri Division is attached to the D. F. O., Ganjam, *vice* Mr. Kesavanunni Nayar, on other duty.

2—8—1927.

M. R. Ry. J. Sadasiva Ayyar Avl., D. F. O. Kollegal, on relief by Mr. Sahni, to be D. F. O., South Kurnool.

Mr. N. D. M. Sahni, A. C. F., Coonoor, to be D. F. O. Kollegal, with effect from date of joining duty.

2—8—1927.

M. R. Ry. A. Raju Nayakar Avl., E. A. C. of Forests, on return from leave, to be attached to the Vizagapatam Division until 27th August 1927, and to be D. F. O. Vizagapatam, from 28th August 1927.

Mr. M. Kesavanunni Nayar, A. C. F., of Forests, attached to the Ganjam Division to be Working Plans officer, Ganjam, with effect from date of taking up the duties.

9—8—1927.

At the half yearly Vernacular examinations held on the 4th July 1927 and following days, the officers mentioned below have been declared to have passed according to the language and the test under which their names appear :—

TAMIL :—

Mr. M. V. Laurie, A. C. F. of Forests, Madura.

TELUGU :—

Mr. B. K. Roy, D. F. O., South Cuddapah.

MALAYALAM :—

Mr. C. R. Ranganatham, A. C. F. of Forests, Palghat.

FOREST LAW, FOREST REVENUE :—

Mr. N. S. Ghate, A. C. F. of Forests Vellore.

FOREST LAW, FOREST & OFFICE PROCEDURE & ACCOUNTS :—

Mr. A. L. Griffith, A. C. F. of Forests, Madura.

Mr. T. S. Ratnavelu Mudaliar, Forest Ranger, Cocanada.

Mr. E. A. Lasrado, A. C. F. of Forests, Palghat.

FOREST LAW :—

Mr. E. W. Fernandez, Ranger, Central Salem.

30—8—1927.

M. R. Ry. B. K. Roy, D. F. O., South Cuddapah, granted leave on average pay for one month with effect from 27th September 1927.

Saiyid Riaz-ud-din Sahib Bahadur, E. A. C. of Forests, attached to the North Cuddapah Division is posted to act as D. F. O. South Cuddapah, during the absence of Mr. B. K. Roy on leave, or until further orders.

M. R. Ry. B. S. Kesava Vittal, E. A. C., of Forests, attached to the Second Circle, granted leave on average pay for three weeks with effect from 1st September 1927, or date of relief.

30 –8—1927.

Mr. B. Janakiram, Singh, A. C. F., Tinnevely Division, is attached to the Logging Engineer, for special duty in the Anamalais.

6—9—1927.

M. R. Ry. M. S. Rangaswami, E. A. C. of Forests, Wynaad Division, is granted leave on average pay for two months with effect from the date of relief.

13--9--1927.

The posting of Mr. K. T. Matthew, A. C. F. to the Logging Engineering Division is cancelled.

20--9--1927.

M. R. Ry. K. Veerasami Ayya Avl., Forest Panchayat officer, leave on average pay for four months with effect from date of relief.

20—9—1927.

Mr. J. C. Wrench, Deputy Conservator of Forests, has been granted extension of leave on medical certificate on half average pay for six months from 19th October 1927.

Mr. E. S. Dawson, Forest Engineer, Olavakkode, to be Forest Engineer, permanent with effect from 19th January 1927.

M. R. Ry. P. Govinda Menon Avl., E. A. C. attached to the Second Circle, is posted to act as D. F. O., Upper Godaveri, during the absence of M. R. Ry. P. Venkataramanan Avl., on leave or until further orders.

Notifications of Rangers.

12—7—1927.

The permanent lien of M. R. Ry. N. K. Sarma, Ranger III grade who has been deputed to the Vizianagaram Estate for a period of three years is suspended in G. O. No. 754 Mis. dated 25th May 1926.

12—7—1927.

2. The sub-protem promotion of the following Rangers in the grade noted agaiust each will with effect from 1st April 1927 be continued in the vacancy caused by the suspension of the Ranger M. R. Ry. N. K. Sarma :—

1.	M. R. Ry. G. Devanayagam Naidu	III	Grade S.P.T.
2.	„ B. Krishna Rao	VI	„
3.	„ M. S. Krishnaswami Ayyer	VII	„

The sub-protem pormotions will be revised on the return of M. R. Ry. N. K. Sarma from foreign service.

Forest Engineering :—

29—6—1927.

Mr. K. C. Joseph, Ranger IV Grade, Exploitation Division, Olavakkot, is transferred to the Forest Engineer's Division, Madras, for road work on the Olavakot Elival Road. To join forthwith.

6—8—1927.

The period of absence from duty of Ranger P. M. Mathew V Grade 9th February 1927 to 20th February inclusive, is treated as leave on average pay.

M. R. Ry. A. Kandan, Ranger III Grade Chenat Nair Exploitation Division, Olavakkot, is transferred for work under the Forest Engineer in-charge Saw Mills and Extraction Division, Olavakkot, with effect from the forenoon of 28th July 1927.

6—10—1927.

Following are the postings of the Logging Engineering Division for the ensuing field work season of 1927-28.

I. *Mount Stuart Mapping and Cruising Project* :—

To work under the supervision of Mr. Laurie, Assistant Conservator of Forests.

Forester N. C. Madappa.
„ T. M. Janardanam.
„ S. A. Augustine.
„ P. B. Kunders.

The first named is to be relieved at Coimbatore on 8th October 1927 afternoon, and join duty at Top Slip expeditiously. The last three named joined duty on 3rd October 1927.

Kallar Valley Mapping and Cruising Project (Anamalais) :—

Range Officer in charge Mr. K. K. Appaiya.

Ranger Mr: U. Vridhachalam Pillai.

Forester C. B. Pemmaiah.
" K. S. Muthana.
" Samuel Edwards.
" Kanna Poduval.

and one new Forester to be recruited.

Silent Valley Cruising Project :—

Forester A. M. L. D'Souza.
" Rangaswami.
" S. Kader Baig.
" Theyuni Menon.
" M. B. Madappa.

II. New Amarapallam mapping and cruising project (Nilambur):—

Officer in charge : Mr. B. Jaikaram singh, A. C. F.

Ranger : Ma. P. M. Mathew—Foresters : B. Parameswaram Pillai, S. Pitchiah, N. C. Madappa, C. M. Madappa, Ramachandran.

At large :—

Head Surveyor . Mr. Atchuthan.

Forester : Mr. S. J. Jeremiah.

To go to Nilambur for baseline running on completion of Mr. Stuart base lines.

Ranger :—Mr. T. D. Ponniah, to complete monsoon office work at Coimbatore, pending Chief Conservator's orders on his petition.

The men designated for Kallar valley and Silent valley projects are to be relieved at Coimbatore on the afternoon of 8th October.

* * * *

FIRST CIRCLE :—

16—7—1927.

Ranger B. V. Vaideswara Iyer will hand over charge to Mr. J. D. David and proceed to take over charge of Pondakhol Range.

Mr. B. Chenchurama Naidu is granted leave for one month for reasons of his health. No extension will be granted under any circumstances.

On return from leave, he will take over charge of Russellkonda Range from Mr. J. D. David.

Mr. J. D. David will hold additional charge of Russellkonda pending the return from leave of Mr. Chenchurama Naidu.

19—7—1927.

1. Mr. D. E. Lewin from Nellore to Palakonda Range Vizagapatam

   to relieve Ranger R. Alegiriswami Naidu granted leave, to join on 1st August 1927.

2. M. R. Ry., A. Subrahmanya Iyer, Ranger 5th grade, on expiry of the leave granted to him (22nd August 1927) to Ganjam, vice S. Kotilingam granted leave.

3. M. R. Ry., D. Krishnaswami Ayyah, Ranger 6th grade on expiry of the leave granted to him (6th August 1927) to Chendragiri Range, Perlakimidi Maliahs, to relieve Ranger N. Chakrapani Ayengar granted leave.

M. R. Ry. R. Alagiriswami Naidu, Range officer, Palakonda is granted leave on average pay for one month with effect from date on relief subject to eligibility,

M. R. Ry. N. Chakrapani Iyengar, Range officer, Chendragiri Range, Parlakimidi Maliahs, is granted 4 months privilege leave from the date of relief.

25—7—1927.

M. R. Ry. K. Raghava Rao, Ranger VII grade, Devagiri Range of Parlakimidi Maliahs, is granted extension of leave on average pay for one month in continuation of the one month's leave granted by the special Forest Officer.

7—8—1927.

Leave on average pay for 3 months granted to M. R. Ry. A. Subrahmanya Iyer, Ranger V grade in this office S. O. No. 12/27 dated 26th April 1927 is extended by one month.

17—8—1927.

The following postings of Rangers returning from leave are ordered :–

1. M. R. Ry. K. Raghava Rao, Ranger VII grade, to Surada Range, Ganjam, to relieve P. Gopalakrishna Rao, Forester II grade.

2. M. R. Ry. B. S. Sankaram, Ranger VI grade, to Ganjam for Special duty.

3. M. R. Ry. A. Subrahmanya Iyer, Ranger V grade to Bhadrachellam Range Upper Godavari, to relieve A. Niladri Rao Forester II grade.

This cancels his posting to Buguda Range.

4. On relief by Ranger P. Chengal Reddi, S. M. Ansur Ali, Forester II grade, is transferred to Balliguda, to work under the Extra Assistant Conservator.

20—8—1927.

M. R. Ry. G. Appa Rao Naidu, Ranger V grade, granted leave on average pay for 2 months from 23 July 1927 is recalled to duty and posted to Lower Godavari for special duty on the revision of the Coringa Working Plan. He should join forthwith.

1—9—1927.

M. R. Ry. A. Thirupatirayudu, Ranger on special duty under the Special Forest Officer, Rampa is granted leave on average pay for 2 months from 5th August 1927.

M. R. Ry. P. Doraswamy Iyer, Ranger III grade, Sreeharikota Range, Nellore District, is granted leave on average pay for 2 months from the date of relief by Ranger M. R. Ry. R. Alagiriswamy Naidu who is due back from leave on 10th September 27.

The period from 30th January 1927 to 9th February 1927 (both days inclusive) when M. R. Ry. T. Balaramaswami Naidu, Range officer Pondakhol Range was under observation in the Hospital is treated as leave on average pay.

M. R. Ry. D. Ramakrishnayya, Range officer, Surada Range is considered to have held additional charge of Pondakhol Range during the period.

6—9—1927.

1. M. R. Ry. R. Alagiriswami Naidu, Ranger IV grade on expiry of his leave (10th September 1927) is posted to Sreeharikota Range. Nellore District vice Ranger Doraswami Iyer granted leave.
2. M. R. Ry. C. T. Tiruvengadam Ranger V grade on expiry of his leave (30th September 1927) is posted to Godavari Lower Division for special duty on the Papikonda road.

10—9—1927.

M. R. Ry. K. Raghava Rao, Ranger VII grade, Devagiri Range of Parlakimidi Maliahs is granted extension of leave on average pay on medical certificate for 4 months from 1st January 1927 in continuation of leave already granted for 2 months.

19—9—1927.

M. R. Ry. C. T. Tiruven gadam, Ranger V grade on expiry of his leave (30th September 1927) is posted to Udayagiri Range, Nellore division in relief of Forester S. M. Ansur Ali under orders of transfer to Balliguda.

This office S. O. posting the Ranger to Godavari Lower for special duty is cancelled.

21—9—1927.

M. R. Ky. P. Chengal Reddi Range officer, Udayagiri Range, is granted an extension of leave on average pay on medical grounds for one month in continuation of the leave for 2 months granted.

23—9—1927.

In connection with the abolition of the Ellore Range and formation of the River Range, the following postings of Rangers are ordered:—

1. M. R. Ry. G. Appa Rao Naidu Ranger V grade posted to Godavari Lower Division for special duty is posted to the Ellore Range to relieve Ranger M. Subba Rao expeditiously. On the abolition of the Ellore Range M. R. Ry. G. Appa Rao Naidu will take over the Rajahmundry Range from M. R. Ry. B. V. Nagaraja Ayyar.
2. On relief by No. 1 M. R. Ry. B. V. Nagaraja Ayyar Ranger II grade is posted to Godavari River Range.
3. On relief by No. 1 M. R. Ry. M. Subba Rao, Ranger VI grade is transferred to Parlakimidi Maliahs and posted to Mahendra Range charge. He will relieve Ranger S. A. Dawson expeditiously to join his appointment in the Parlakimidi Estate.

SECOND CIRCLE:—

16—6—1927.

Ranger M. R. Ry. T. N. Seshagiri Row is granted privilege leave for 19 days from the date of his relief by Ranger M. R. Ry. K. R. Viswanatha Iyer.

He will retire from service from the date of expiry of the leave.

27--6--1927.

M. R. Ry. V. N. Subramania Iyer, Ranger VI grade will take charge of the Bairluthy Range and relieve K. Raguraman at once.

5--7--1927.

1. M. R. Ky. T. Sreeramulu Naidu Range Officer Ganganapalli is granted one month's leave on average pay from the date of relief.

2. M. R. Ry. Devanaikam Naidu Range Officer Vempally will relieve No. 1 immediately and will be in charge of Ganganapally Range in addition to his own duties.

7--7--1927.

M. R. Ry. D. N. Subramania Aiyar, Ranger VI Grade, Kurnool West Division is granted an extension of leave on Medical certificate on full average pay from 2nd May 1927 to 28th June 1927 (both days inclusive) in continuatinn of the leave granted.

M. R. Ry. N. Rajagopala Chetty, Supernumerary Ranger Kurnool East Division is granted an extension of leave on full average pay on Medical Certificate for 2 months from 25-6-27 in continuation of the leave granted for 4 months and 6 days.

8--7--1927.

M. R. Ry. K. Purushothama Rao, Ranger VI Grade, on special duty is granted leave on average pay without Medical certificate for one month from the date of relief.

12--7--1927.

The posting of M. R. Ry. V. N. Subramania Aiyer to Bairluty Range is cancelled.

2. Mr. J. B. Rodrigues, Supernumerary Ranger is posted to Bairluty Range to relieve Mr. K. Raghuraman, Ranger VI Grade.

14—7—1927.

1. M. R. Ry., K. Raghuraman Ranger IV Grade, Kurnool West Division is granted leave on full average pay for two months from date of relief.

2. M. R. Ry. B. H. Anandathirtha Rao, Ranger, V grade (Junior instructor, Vernacular Training School) Cuddapah North Division is posted to the charge of Bairluty Range vice No. 1 on leave.

M. R. Ry., O. Venkatramana Aiyer, Ranger I grade, on return from leave (on 26th July 1927) is posted to work under the orders of the District Forest Officer Anantapur Division for collection of statistics for the revision of Working Plan of Idupulapaya Plantation in Vempalle Range.

19—7—1927.

1. M. R. Ry., T. Venkatasubbiah Range Officer Rajampet is granted an extension of leave on average pay for 15 days in continuation of the leave granted.

2. M.R.Ry. P. Dhananjaya Rao Range Officer Kodur will continue to be in additional charge of Rajampet Range vice No. 1 on leave.

1. M. R. Ry. C. Ramaswamy Naidu Ranger I Grade is on return from leave posted to the charge of Bukkapatnam Range Anantapur Division vice No. 2.

2. M. R. Ry. T. G. Sitarama Mudaliar, Ranger VI Grade, Bukkapatnam Range, Anantapur Division is on relief by No. 1 posted for special duty—tending etc., in Cuddapah South Division.

22—7—1927.

M. R. Ry. A. Vyasalu, Ranger VII grade, Pecheruvu Range, Kurnool West Division is granted leave on full average pay for one month and 15 days from 1st August 1927 or date of relief.

2. M. R. Ry., K. Raguraman Ranger VI grade on return from leave is posted to Pecheruvu Range vice No. 1.

M. R. Ry. T. N. Seshagiri Rao, Ranger I Grade, Anantapur Division is granted privilege leave for 21 days and furlough on half-average pay for the remaining period from date of his relief to 31-3-28. He will retire from service on 1-4-28.

25—7—1927.

M. R. Ry. Y. Peddalakshmayya Naidu, Ranger V Grade, Kurnool West Division, on expiry of his special duty, is posted to Markapur Range Kurnool East Division.

2. M. R. Ry. S. Sankaram, Ranger V Grade, Markapur Range, Kurnool East Division is on relief by No. 1, posted to Giddalore Range, Kurnool South Division to relieve Ranger K. S. Ramayya who has applied for leave.

26—7—1927.

Mr. J. B. Rodrigues supernumerary Ranger incharge of Bairlooty Range is on relief in Bairlooty Range by the Ranger M. R. Ry. Anandahthirtha Rao posted to Pecheruvu Range vice M. R. Ry. A. Vyasulu Ranger VII grade on leave.

27—7—1927.

M. R. Ry. K. S. Ramiah Ranger VI grade Giddalore Range Kurnool South Division is granted leave on full average pay for 6 weeks from date of relief by Ranger Sankaran.

M. R. Ry. V. N. Subramania Iyer Ranger VI grade on special duty Kurnool West Division, is granted leave on full average pay for 3 months from 1st July 1927.

1—8—1927.

1. M. R. Ry T. Venkatasubbayya, Ranger V grade, on return from leave (on 5th August 1927) to Sanipaya Range Cuddapah South Division.

1 -8—1927.

2. R, R. Ry. A. Muthukrishnan, Ranger, Sanipaya Range, on relief by No. 1 to Gudlabrahmeswaram Range of Kurnool West Division.

3. M. R. Ry. C. R. Rajagopalan Ranger VI grade, Gundlabrahmeswaram Range on relief by No. 2 to continue on special duty in Kurnool West Division for preparation of Working Plan maps for Nallamalais Terrai Forests.

4. M. R. Ry. M. Krishna Rao, Ranger III grade, on return from leave (27th August 1927) to Rajampet Range, Cuddapah South Division.

10—8-1927.

Ranger A. Rahiman Khan, VI grade, Owk Range, Kurnool South Division is posted on the abolition of Owk Range from 15th instant or date of relief, to work under the orders of the District Forest Officer, Kurnool West in connection with the collection of some data for revision of the Yerramalais working plan.

16—8—1927.

M.R.Ry T. Sreeramulu Naidu, Ranger VII grade, Anantapur Division is granted an extension of leave for 3 months from 11th August 1927 (leave on full average pay for 24 days and half average pay for 2 months and 6 days) in continuation of one month leave granted.

26--8--1927.

M. R. Ry. K. Purushothama Rao, Ranger VI grade, Kurnool West Division is granted an extension of leave on full average pay for one month from 22-8-27 in continuation of one month's leave granted.

30—8—1927.

M, R. Ry. M. Krishna Rao is posted to the charge of Kodur Range on the expiry of his leave.

2. M. R. Ry. P. Dhananjaya Rao Ranger IV Grade now in additional charge of Rajampet Range, will on relief by No. 1 continue to be in charge of Rajampet Range.

5—9—1927.

Ranger K. Purushothama Rao is reduced temporarily for period of 4 months from VI grade to VII grade with effect from 6th September 1927.

6—9—1927.

1. M. R. Ry. R. Alagiriswamy Naidu, Ranger IV grade on expiry of his leave (10-9-1927) is posted to Sreeharikota Range, Nellore District vice Ranger Doraswami Iyer granted leave.

2. M. R. Ry. C. T. Tiruvengadam Ranger V grade on expiry of his leave (30th September) is posted to Godavari Lower division for special duty on the Papikonda road project.

14—9—1927.

M. R. Ry. K. Raghuraman Ranger VI grade, Kurnool West Division is granted an extension of leave for 2 months (17 days on full average pay and the rest on half average pay from 8-9-27 in continuation of 2 months leave granted. As already ordered he shall take charge of Pecheruvu Range at the expiry of his leave.

25—9—1927.

M. R. Ry., S. M. Krishnaswamy, Ranger III grade, Kurnool West Division is granted an extension of leave on medical certificate for one month (17 days' leave on average pay and 13 days on half average pay) from 1st October 1927 in continuation of the leave granted.

25—9—1927.

On return from leave he will take charge of Cuddapah Range of Cuddapah South District.

Supernumerary Ranger V. N. Leapingwell working under the Special Sylvicultural Officer, is granted leave on full average pay for two months from 8th October 1927 or date of relief.

27—9—1927.

M. R. Ry., V. N. Subramanya Ayyar, Ranger VI grade Kurnool West Division is granted an extension of one month's leave on full average pay from 1st October 1927 in continuation of 3 months' leave granted.

28—9—1927.

M. R. Ry., S. V. Duraiswami Ayyar Ranger VI grade Cuddapah Range, Cuddapah South Division is granted leave on full average pay for two months from date of relief by Ranger M. R. Ry. S.M. Krishnaswamy Ayyar who is due from leave on 1st November 1927.

30—9—1927.

M. R. Ry., K. S. Ramaiah Ranger IV grade, Kurnool, North Division is granted an extension of leave on full average pay for two months in continuation of 6 weeks' leave granted from 2nd August 1927.

2—10—1927.

M. R. Ry., A. Vyasalu Ranger VII grade, Kurnool West Division is granted an extension of leave for one month from 11th October 1927 on full average pay in continuation of the leave granted for 1 month and 15 days from 26th August 1927.

THIRD CIRCLE:—

10—9—1927.

Ranger Raman Pillai is transferred from the Nilambur Working Plans Division to the Mount Stuart Working Plans Division.

FOURTH CIRCLE :—

30—6—1927.

Mr. P. S. Syed Yahia, Ranger V Grade, Central Salem division is granted leave on medical certificate for 4 months and 1 day from 6th April 1927.

7—7—1927.

M. R. Ry. K. M. Gopalachari Ranger IV Grade, is granted extension of leave on average salary on medical certificate for 6 weeks from 11th June 1927.

2. On return from leave on 23rd July 1927 he is posted for special duty in the Tirupattur Range, Vellore division.

9—7—1927.

IV Grade Ranger M. R. Ry. P. A. Krishnaswami Mudaliar is reduced temporarily for one month to V Grade for gross neglect of duty.

11—7—1927.

1. M. R. Ry. R. Manickam Pillai, Ranger II Grade, Senior Instructor, Vernacular Training School, 1927 Session, Central Salem division is on the termination of the session, posted to the charge of Santhavasal Range, Vellore division.

M. R. Ry. P. K. Subbanarayana Ayyar, Assistant Instructor Vernacular Training School, 1927 Session, Central Salem division is on the termination of the school, posted to South Salem division for special duty in connection with the preparation of a working plan for the division.

Mr. P. B. Syed Yania Ranger V Grade on return from leavs is posted for special duty in Shevaroys South Range Central Salem division.

20—7—1927.

The posting of Supernumerary Ranger P. K. Subbanarayana Ayyar for special duty is cancelled and he is posted instead to the Charge of Cavery Range, Central Salem division.

2. Mr. E. W. Fernandez Ranger on relief by No. 1 is posted to special duty in the South Salem Division in connection with the collection of data for the preparation of a Working Plan for the division.

22—7—1927.

M. R. Ry. P. A. Krishnaswami Mudaliar, Ranger V Grade, Santhavasal Range is granted, leave on average pay on medical certificate for 3 months from date of relief.

27 -7—1927.

The posting of Ranger M. R. Ry. Gopalachari to charge of Santavasal Range is cancelled. He will continue on special duty in the Tirupattur Range as ordered.

2. Ranger M. R. Ry. S. M. Srinivasagam Pillai in charge of Polur Range will assume additional charge of the Santavasal Range until further orders vice M. R. Ry. P. A. Krisnaswami Mudaliar Ranger granted leave.

27—7—1927.

M. R. Ry. S. Ramanujam Sesha, Ranger VI Grade Central Salem division is granted further extension of leave on medical certificate made up of (i) leave on average pay from 7th July 1927 to 20th July 1927 and (ii) leave on half average pay from 21st July 1927 to 12th September 1927.

30—7—1927.

M. R. Ry. R. Manickam Pillai, Ranger II grade, Senior Instructor, Vernacular Training School, 1927 Session, is on the termination of the session posted to the charge of Polur Range, Vellore division.

2. M. R. Ry., S. M. Srinivasagam Pillai, Ranger V Grade, Polur Range ordered to be in additional charge of the Santavasal Range will on relief by No. 1 continue to be in charge of Santhavasal Range, Vellore division.

10—8—1927.

Third Grade Ranger, M. R. Ry., K. M. Gopalachari, under temporary reduction to Fourth Grade for 2 months from 13-6-27 will be permanently reduced to the bottom of (Fourth) Grade.

19—8—1927.

M. R. Ry., S. Ramanujam Sesha, Ranger, IV Grade on return from leave and on production of certificate of fitness to return to duty is posted for special duty in the Vellore division.

28—8—1927.

Sixth Grade Ranger M. R. Ry., S. Nagalingam Pillai is permanently reduced from the VI to the bottom of the VII Grade.

FIFTH CIRCLE.

28—6—1927.

In continuation of the 3 months leave granted in this office S. O. No. 24/27 dated 29th April 1927, M. R. Ry. C. Tiruvengadam Pillai is granted leave on average pay on medical certificate for one month.

8—7—1927.

In continuation of the one month's leave granted from 1·6-27 afternoon M. R. Ry. S. Sundaravarada Chari, Ranger IV grade is granted leave on average pay on medical certificate for 6 weeks·

2. M. R. Ry. A. R. Manuals, Ranger VI grade attached to Ayyalur Range in Madura District is posted to charge of Burgur Range, Kollegal Division. To joint at once.

21—7—1927.

On relief by Ranger P. Velayudhan Nair, M. R. Ry. P. Sithapathi Ayyar, Ranger V Grade, Tunacadavu Range, South Coimbatore District, is posted to the Ayyalur Range, Madura District.

23—7—1927.

1. M. R. Ry., P. Sithapathy Ayyar, Ranger V Grade, is posted to charge of Ayyalur Range, Madura District.
2. Mr. M. V. Laurie, Assistant Conservator. of Forests will on relief be on special duty under the District Forest Officer, Madura, for selection of areas to be protected.

24—9—1927.

M. R. Ry. B. S. Ramaswami Ayyar Ranger IV Grade, Kollegal, is granted leave on average pay for 2 months from the afternoon of 15th September 1927.

27—8—1927.

Mr. M. P. Philip, Ranger, VI Grade, is posted to the Nanguneri Range on completion of his special duty. Pending the termination of his special duty M. R. Ry. K. Jayarama Ayyar, Ranger VI Grade, will be posted to charge of Nanguneri Range, Tinnevelly District, in relief of Mr. B. Janakiram Singh on recipt of orders of his transfer to the Logging Engineer Division.

30—8—1927.

M. R. Ry. M. P. Philip, Ranger VI Grade, is posted to charge of Nanguneri Range, Tinnevelly district, in relief of Mr. B. Janakiram Singh who has been transferred to the Logging Engineer Division.

2. M. R. Ry. K. Jayarama Ayyar Ranger VI grade, will take charge of Cumbum Range in Madura district.

3. On relief by No. 2 M. R. Ry. A. B. Fenn Ranger V grade, Cumbum Range, is granted leave on average pay for 3 months. The date of relief should be reported.

M. R. Ry. A. K. Kunhunni Nair, Ranger. V Grade, Pollachi Range, is granted leave on average pay for 2 months from or after 2nd October 1927.

M. R. Ry. A. K. Anantharama Ayyar, Ranger VI grade, on return from leave, is posted to charge of Pollachi Range South Coimbatore division.

11—8—1927.

M. R. Ry. K. O. Anandan, Supernumerary Ranger, on leave is transferred to North Coimbatore Division on special duty to work under the orders of the District Forest Officer, North Coimbatore.

SIXTH CIRCLE:—

21—6—1927.

Mr. Thomas Thachil, Ranger III grade, is granted an extension of one month's leave on average pay on medical certificate in continuation of the leave granted.

25—7—1927.

M. R. Ry. K. Dooma Shetty, Ranger V grade, on special duty, from the Palghat Division to the Nilgiris for the charge of the Coonoor Range—vice Mr. N. D. M. Sahni transferred to the V Circle.

20—8—1927.

On his return from leave (by 28th August 1927) Supernumerary Ranger M. V. Ganesan is posted for special duty in the Palghat division.

22—9—1927.

M. R. Ry. N. Gopalan Nair, Range Officer, attached to the Mudumalai Range, is granted leave on average pay for four months, from 15th August 1927.

28—9—1927.

M. R. Ry. P. Madhavan Nair, Supernumerary Ranger, is granted leave on average pay on medical certificate for six months from 17th August 1927.

1—10—1927.

M. R. Ry. K. Sankaranarayana Rao, Ranger V grade, at the end of the Vernacular Training School session, to the charge of the Palghat Range.

2. Supernumerary Ranger M. M. Mandanna at the end of the Vernacular Trainning School session for special duty in South Mangalore.

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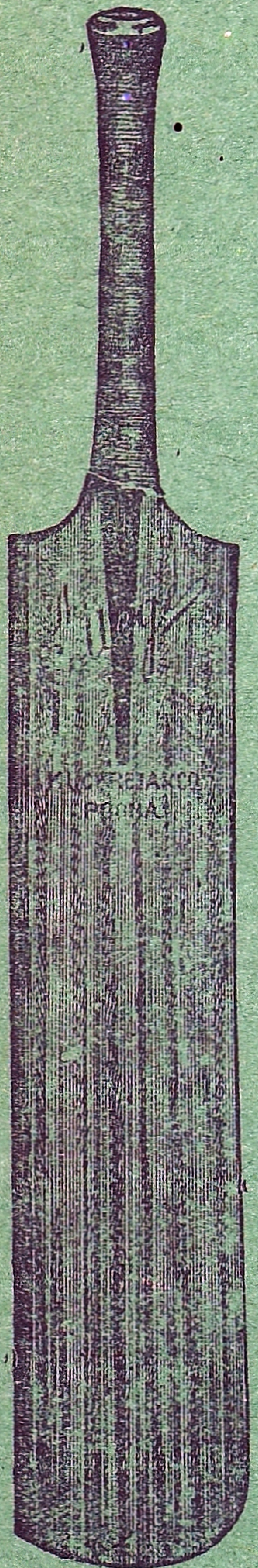

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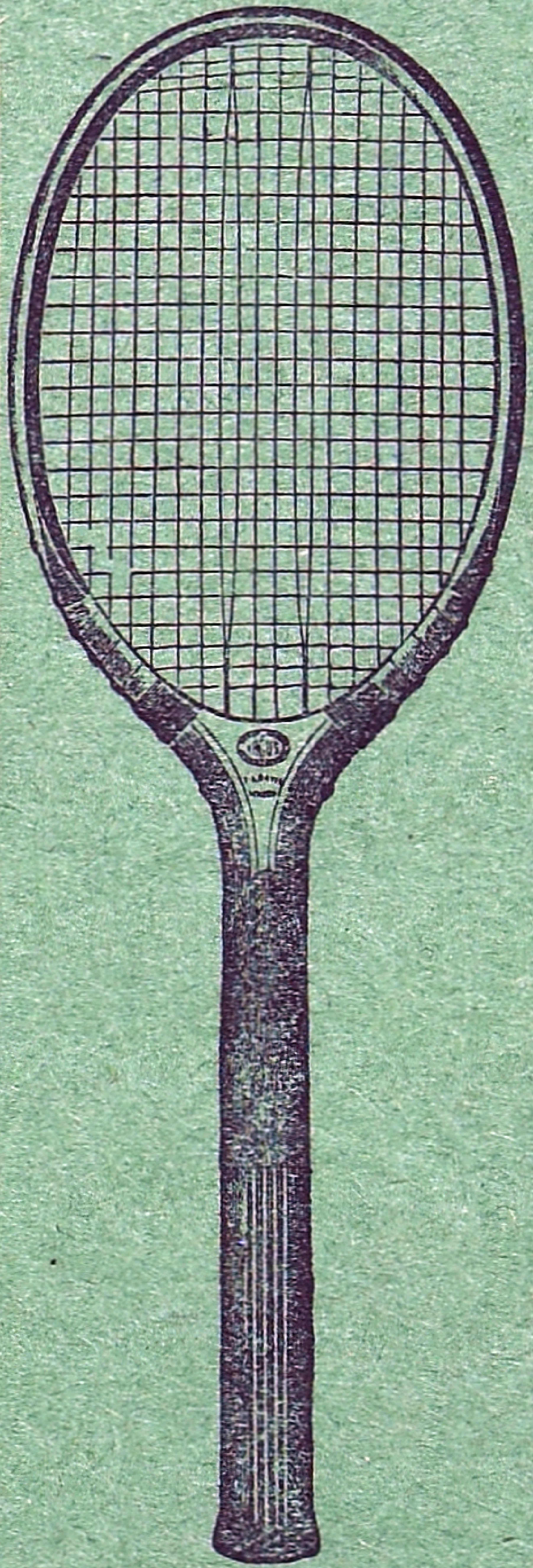

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